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May, 1957

SOAP and CHEMICAL SPECIALTIES

n this issue...

ustrial detergents sales osted by new applications

* * * * *

drocarbon propellants d for aerosol formulas

* * * * *

w insect repellent widely erior in wipe resistance

* * * * *

blems of industrial user selecting a floor finish

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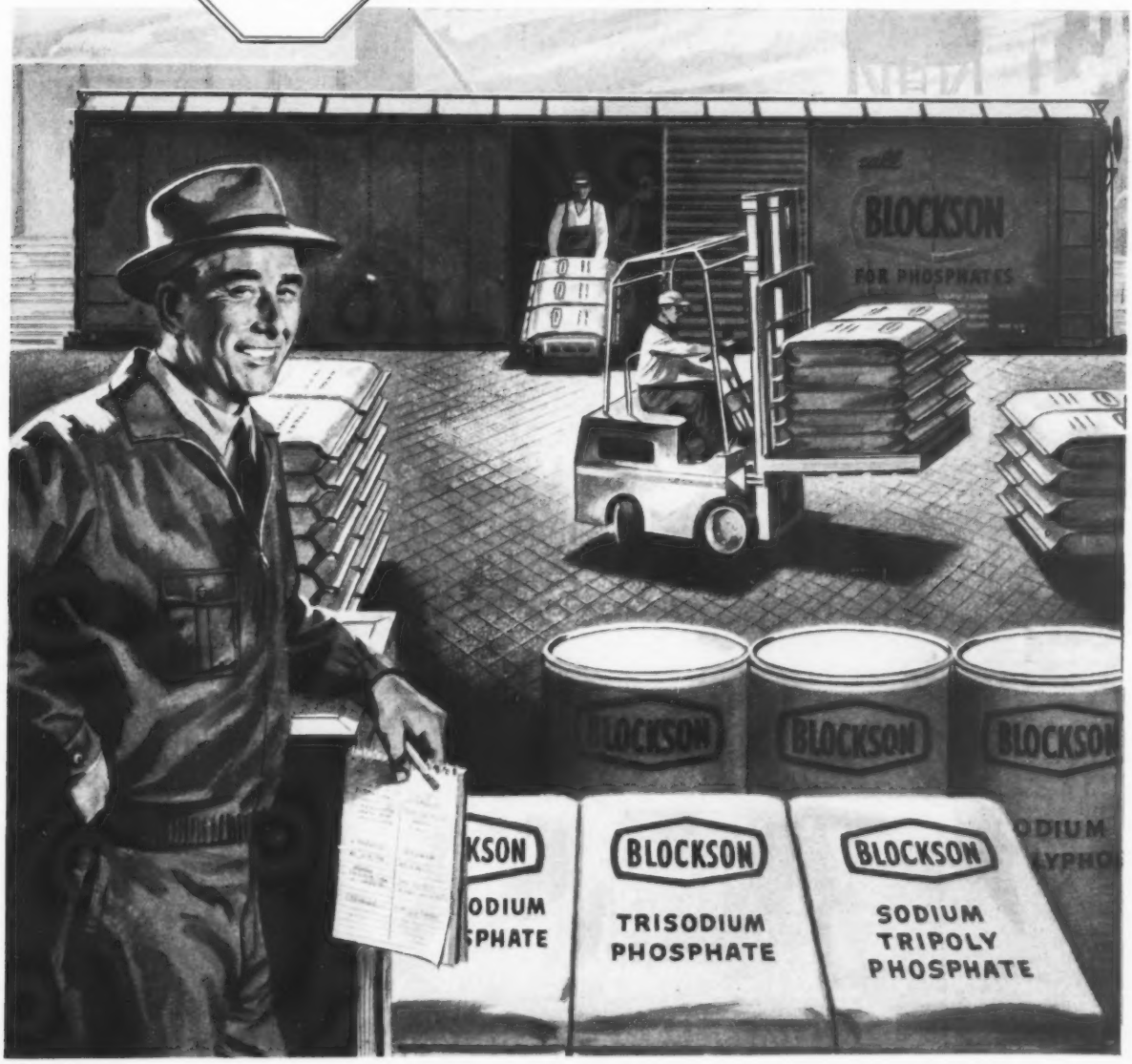

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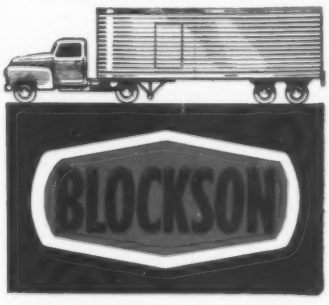

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FRANK J. REILLY
Editor

Associate Editor
CHARLOTTE HAAS

Advertising Manager
THOMAS MORGAN

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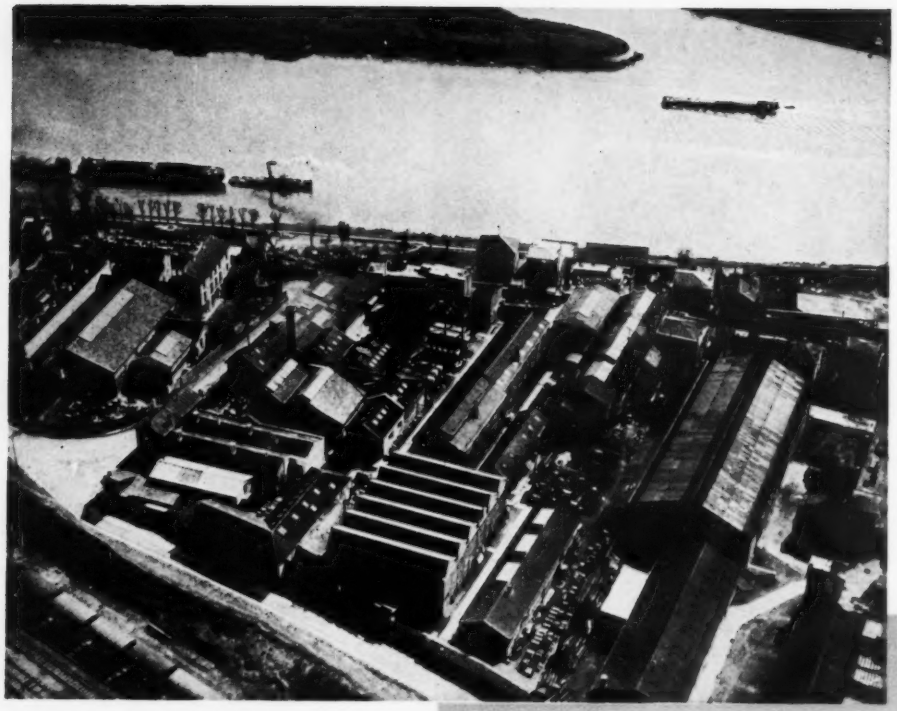

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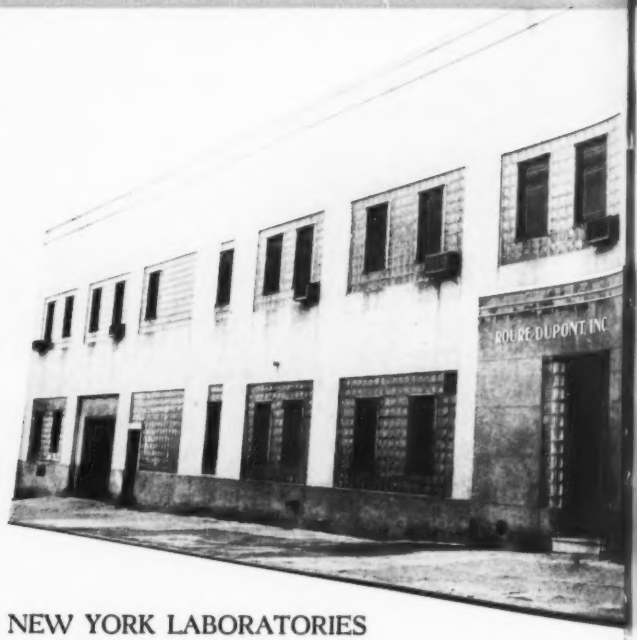

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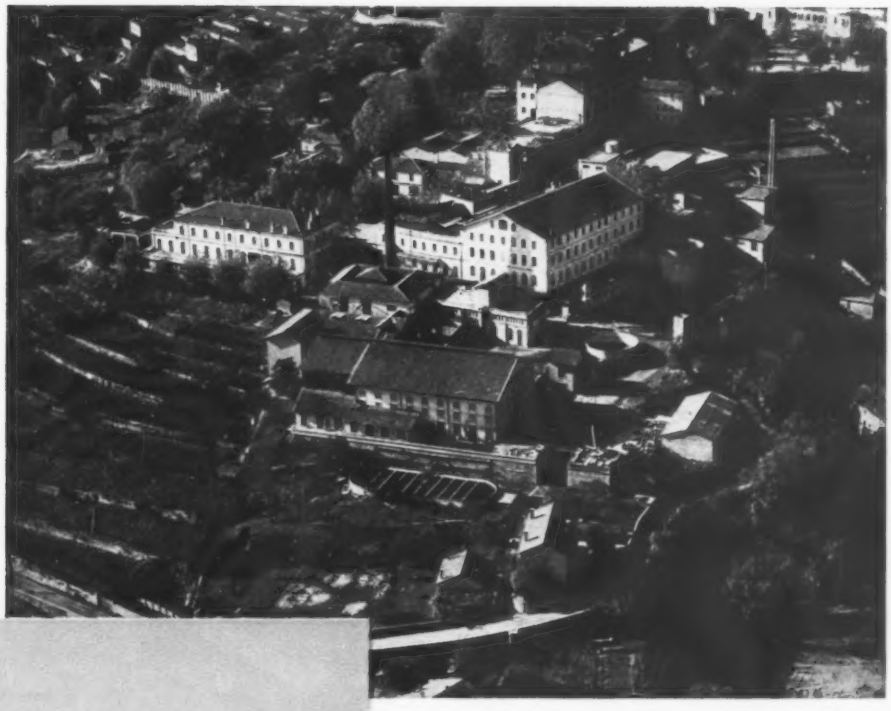

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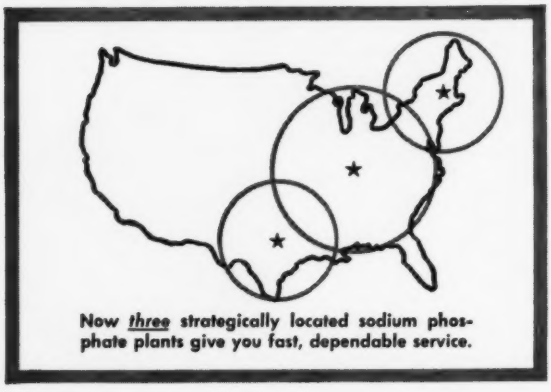

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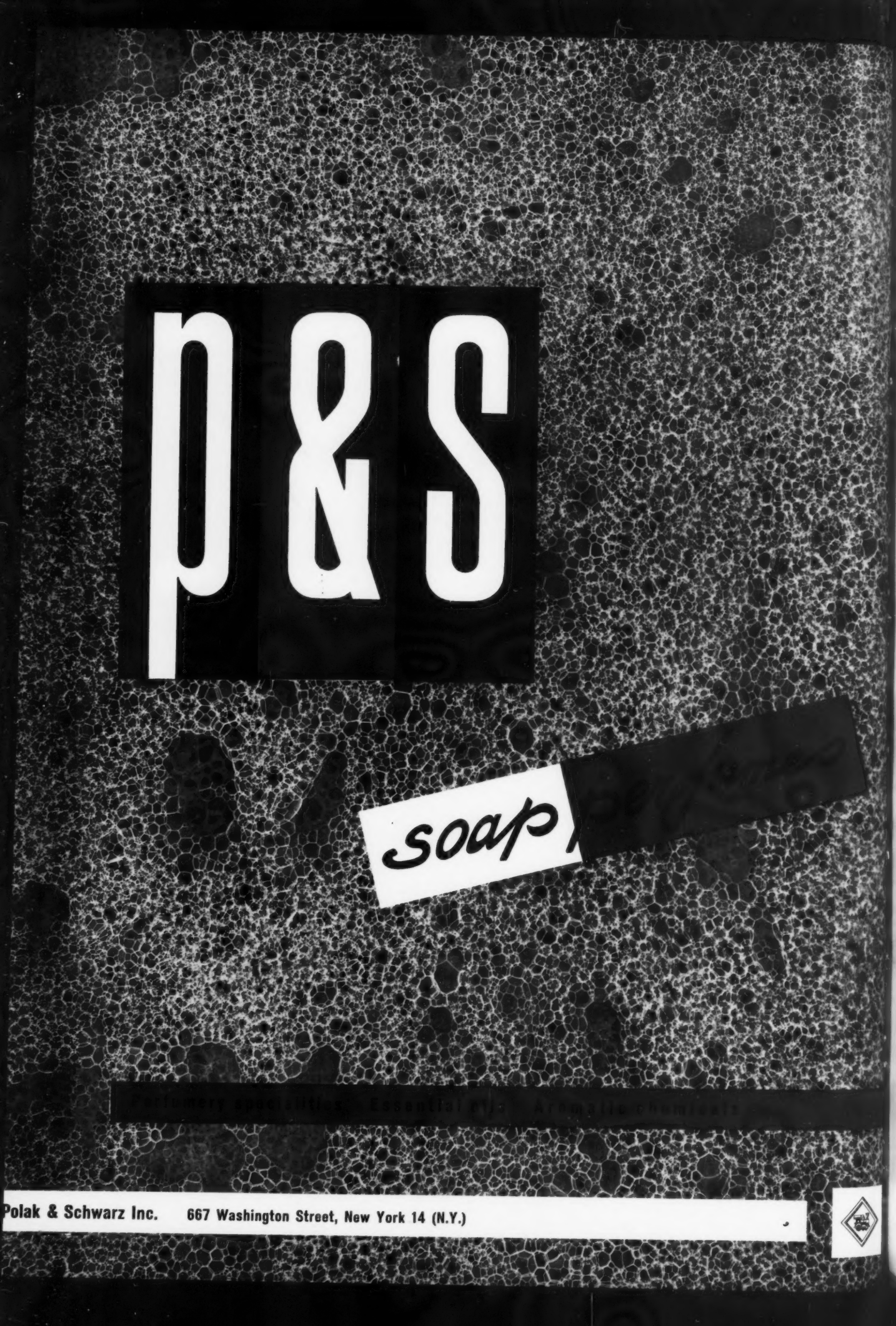

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	Regular Distilled	157 Min.	18-24	6 Max.	197-204
	SM-500	152 Min.	18-24	10 Max.	195-204
SOYA	Water White Distilled	135 Min.	20-23	2 Max.	195-205
	RO-10	124 Min.	23-29	5-6 Max.	195-205
	RO-11-S	124 Min.	23-29	4 Max.	195-205
SOYA-TYPE	RO-8	115 Min.	30 Max.	6-8	195-205
COTTONSEED	Double Distilled	95-110	32-38	8 Max.	195-205
CORN	Double Distilled	105-120	26-32	8 Max.	195-205

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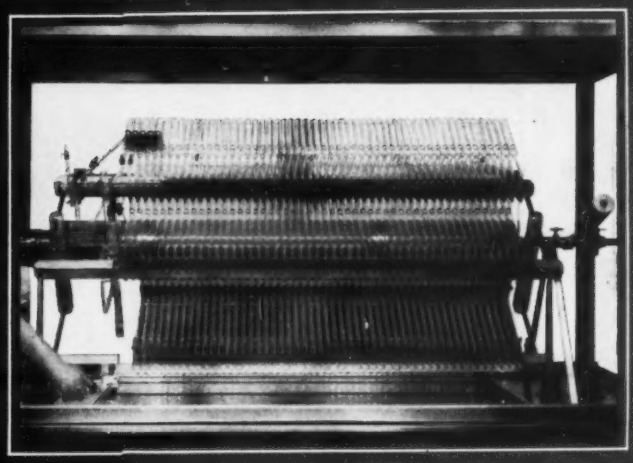

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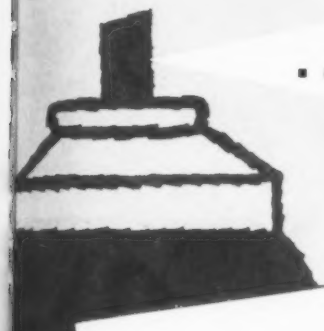

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Emulsifier

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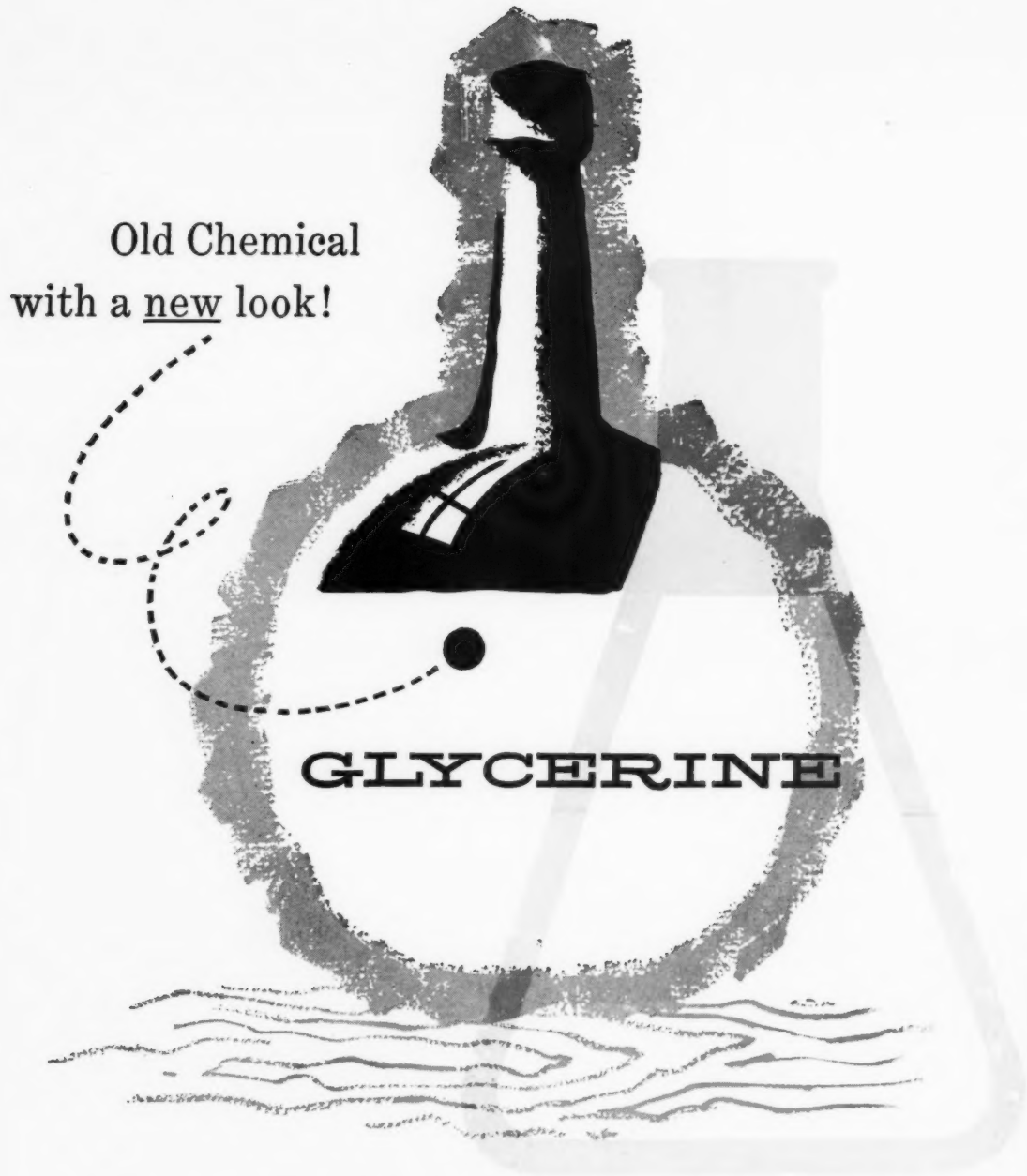

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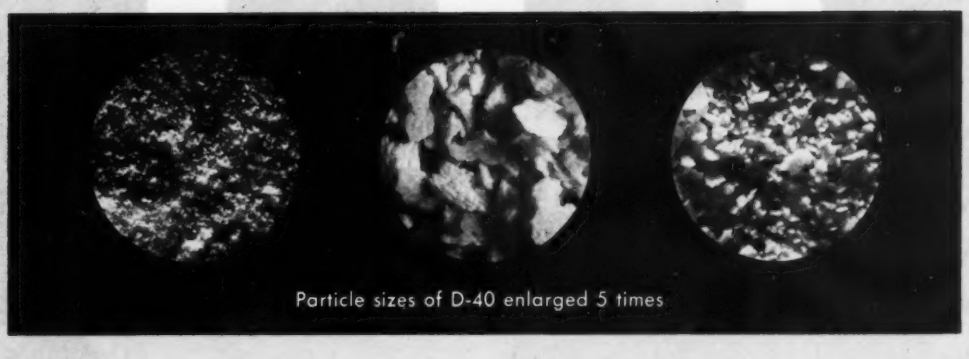

D-40* the dependable, versatile dry detergent

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Appointment of Frank P. Denney as vice-president in charge of plans and special projects of

Frank P. Denney

Purex Corp., Ltd., South Gate, Calif., was announced early this month by Adrien C. Pelletier, president. Mr. Denney formerly was division manager of supply and manufacturing of Safeway Stores, Inc., San Francisco, with whom he was associated for the past 12 years. Prior to that he served with J. Walter Thompson advertising agency as an account executive.

★

New Wash Accelerator

Beach Soap Co., Lawrence, Mass., recently announced a new "wash accelerator," "Phosrite," for use in scrub operations of commercial laundries. The new product contains ethylene diamine tetra acetate which is responsible for its lime soap solubilizing powers.

By converting insoluble lime soap into active soap, "Phosrite" acts as a soap regenerator, Beach claims. In addition to suspending dirt the product prevents redeposition during the wash. The product also is a cleansing agent capable of removing many of the most resistant soil stains, according to the manufacturer. The use of "Phosrite" is said to enable the commercial launderer to handle two more loads per wheel per day while saving $2.26 a day per wheel in fuel.

A 16-page brochure entitled, "A New Way to Wash," giving detailed information on how the new product accelerates the laundering process, is being made available to users.

★

Cos. Chemists Meet

A study of "A New Family of Amphoteric Surfactants," by D. L. Anderson, A. J. Freeman and Dr. J. W. Opie, all of General Mills, Inc., Minneapolis, was to be one of seven technical papers scheduled for presentation at the annual spring meeting of the Society of Cosmetic Chemists at the Hotel Commodore, May 10. Other papers are "Fundamental and Comparative Actions of Cleansing Creams," by Dr. Albert R. Latven, Pharmacology Research, Inc.; "Some New Keys to Cosmetic Chemistry," by P. G. I. Lauffer, George W. Luft Co.; "Problem Solving," by Derek Till, Arthur D. Little, Inc.; "A New Water Soluble Polymer for Cosmetic Compounding," by Charles A. Dittmer, B. F. Goodrich Chemical Co.; "Some New Considerations About the Chemistry of Acne," by Dr. Thelma G. Warshaw, department of dermatology and syphilology, New York University; and "The Pushbutton Age," by A. R. Marks, Wheaton Plastics Co.

★

American Names Three

American Sanitation Institute, a division of The Huge Co., St. Louis, recently announced appointment of three district service managers. The new appointees will supervise company service activities in the following territories: Philip P. Wallace, Ohio, western Pennsylvania, eastern Indiana and Kentucky; Philip H. Burnett, Chicago, northern Illinois, Wisconsin and Michigan; Ralph T. Murray, southern Illinois, western Indiana and Kentucky.

★

Renard in New Post

John J. Renard has been named sales manager of the package division of Anchor Hocking

John J. Renard

Glass Corp., Lancaster, O. Mr. Renard joined Anchor Hocking in 1936 and for the past ten years has served as sales representatives in Chicago. He previously had served in similar capacities in St. Louis and Lancaster.

★

New Wyandotte Plant

Construction of a new plant for the manufacture of "Pluronic" and "Tetronic" polyols was begun recently by Wyandotte Chemicals Corp., Wyandotte, Mich., in that city. Both products are nonionic surfactants used as intermediates in the production of polyurethane foam plastic. According to Frank B. Walcott, vice-president, the new unit will also produce many oxide chemicals. Completion is scheduled for late this year.

★

Turco Names Graham

Appointment of Carl F. Graham as director of research and development of Turco Products, Inc., was announced last month. For the past 16 years, Mr. Graham had served a manager of analytical research for Wyandotte Chemicals Corp., Wyandotte, Mich. Prior to

that, he was laboratory manager of the Kansas City, Mo., plant of Procter & Gamble Co., Cincinnati.

—★—

Pfaudler Names Clark

Willard D. Clark has been appointed sales representative in the New England states for Pfaudler Co., Rochester, N. Y., processing equipment firm, it was announced recently. Prior to joining Pfaudler in November, 1956, Mr. Clark was associated with Colgate-Palmolive Co., New York, in sales and sales engineering capacities. Mr. Clark will headquarter at the firm's New England branch office, 50 Kearney Rd., Needham Heights, Mass.

—★—

New Anti-Foam Agent

Hodag Chemical Corp., 7247 North Central Park, Chicago 45, recently announced a new anti-foam agent designed for use in antibiotic waste treatment plants of industrial companies and municipalities. Tradenamed "S-118," the new product is applied by means of a spray system. It is dark amber in color and said to be non-corrosive, non-clogging and stable for long periods of storage.

Olin Enlarges Alabama Unit

Completion of an $8,000,000 addition to its McIntosh, Ala., chlorine and caustic soda plant, was announced last month by the industrial chemicals division of Olin Mathieson Chemical Corp., Balitmore. The expansion, which doubles the unit's capacity, will permit production of 250 tons of chlorine and 280 tons of caustic soda daily. The original structure was built in 1952.

Major features of the new plant, according to John O. Logan, vice-president and general manager of the industrial chemicals division, are a new barge loading facility on the Tombigbee River; a new electrolytic cell building; a power input substation; brine purifying and brine dechlorinating equipment; and chlorine liquifying and tank car loading facilities.

—★—

Scarry in New Post

Joseph Earl Scarry has been named manager of E. J. Scarry & Co., Denver, Colo., it was announced recently by the board of directors. In his new post, Mr. Scarry will supervise advertising a sales training program and new product development. Mr. Scarry was credited with development of "Brite-Shine 18," a new emulsion floor wax which was introduced by the company last December.

—★—

New 'Chem-Vape' Fungicide

Chemical Insecticide Corp., 129 Montague St., Brooklyn 1, N.Y., recently announced the introduction of a new fungicide designed to control weeds and soil borne insects with one application. Tradenamed "Chem-Vape," the new product is a sodium methyl dithiocarbamate with low toxicity. One application before planting is said to effectively control various grasses, broad-leaf weeds, nematodes, insects and fungi. In addition, the product leaves the soil shortly after application, permitting the treated areas to be planted the same season.

"Chem-Vape" is available in one, five, 30 and 55-gallon containers. A six-page technical bulletin furnishing additional product data is available on request.

New Multi-Clean President

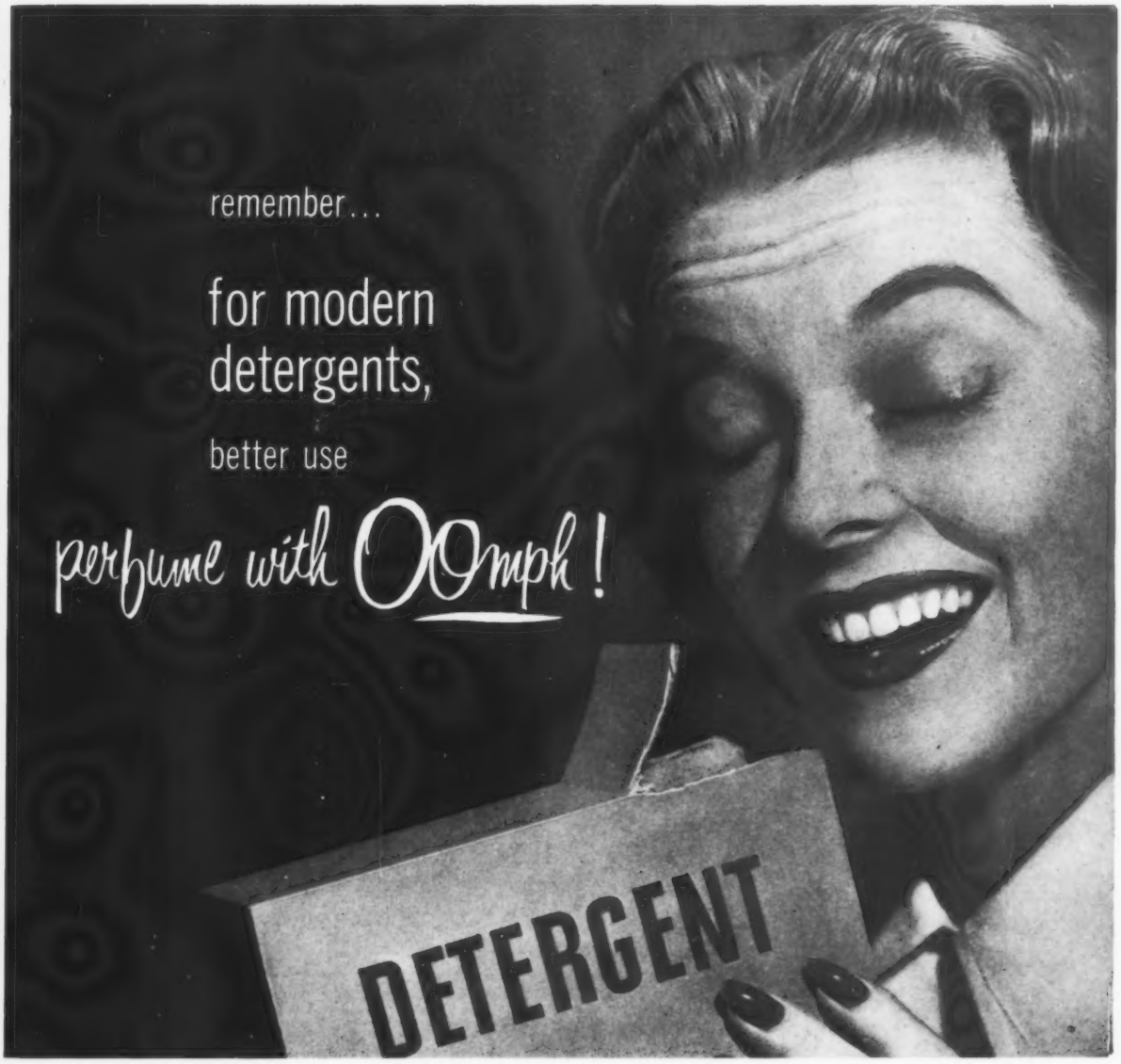
E. V. Coulter has been elected president of Multi-Clean Products, Inc., St. Paul, Minn., it was announced early this month by the board of directors. The firm makes a complete line of floor maintenance materials, including floor waxes and polishes, and cleansers, rug and carpet scrubbing compounds, as well as a complete line of floor machines. Mr. Coulter, formerly vice-president, succeeds Norman H. MacRae, with whom he co-founded the company in 1934. Mr. MacRae died suddenly of a heart attack Apr. 24 at Belmond, Ia., while on a business trip. He was 62 years old.

Other newly-elected Multi-Clean officers include E. C. Hesli, vice-president and general sales manager; William E. Westerdahl, secretary; and C. A. Halverson, who was re-elected treasurer. Mr. Hesli, who has been a member of the board of directors for several years, joined Multi-Clean in 1947 as a sales representative and was named sales manager in 1951.

E. V. Coulter

E. C. Hesli

William E. Westerdahl



Modern detergents present special scenting problems which have received careful technical attention from Felton Chemists.

Using ordinary oils to perfume a detergent is like sending a boy to do a man's job. As a result of applied research and innumerable tests with every type of detergent, Felton is able to offer the manufacturer highly dependable perfume oils that simply won't *whiten-out.*

AROMATICS • ESSENTIAL OILS • PERFUME BASES

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PLANTS: Brooklyn, N. Y. • Los Angeles, Cal. • Montreal, Que. • Versailles (S&O) Fran
SALES OFFICES: Atlanta • Boston • Chicago • Cleveland • Philadelphia • St. Louis • Toron
Stocks Carried in Principal Cities

Felton Detergent Perfumes have what it takes!

Tell us about your detergent product and its use; we will be very glad to send you suitable perfume samples.

FELTON CHEMICAL COMPANY, INC.
599 Johnson Ave., Bklyn. 37, N. Y.

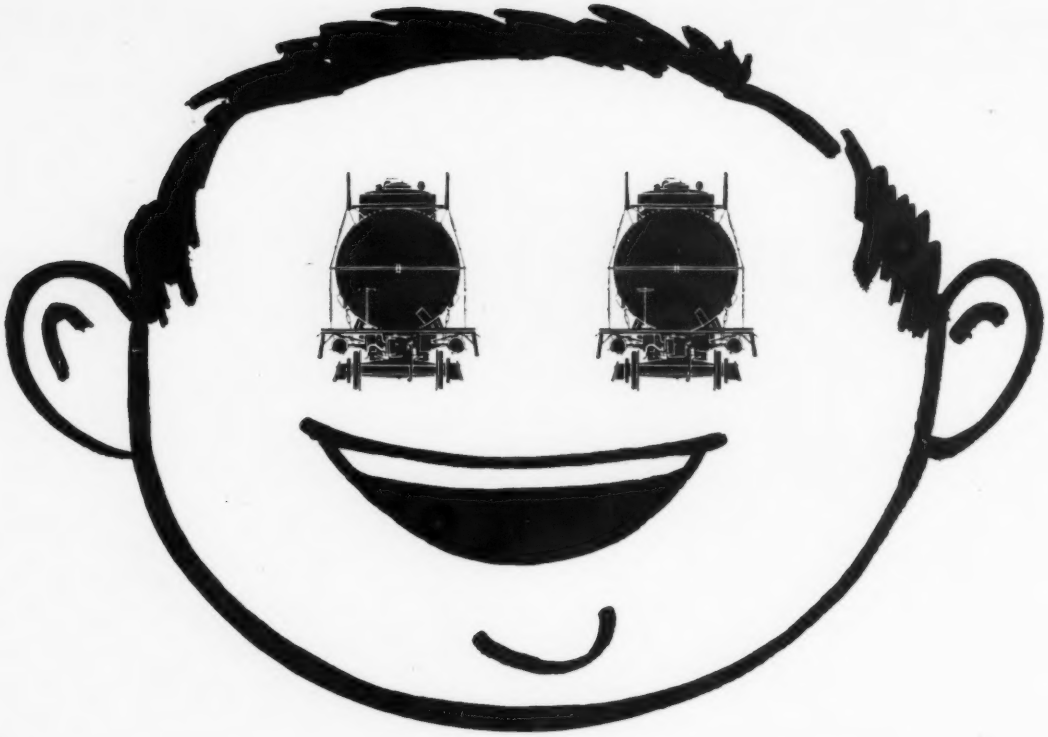
Name.....

Position.....

Firm Name.....

Address.....

City.....Zone.....State.....



"Sitting Pretty" on Alkalis

Sitting atop vast brine fields, our modern electrolytic caustic-chlorine operation at South Charleston, W. Va. is one of the largest in the industry.

From this strategic location we give exceptional service to alkali users in the industrial areas of the Midwest, Mid-South, Middle Atlantic States and New England. Frequently we're hours or days closer by rail, truck or waterway than producers who are nearer on the map.

On soda ash, too, we have much to offer.

From immense deposits of pure trona at Westvaco, Wyoming we refine a rapidly-soluble soda ash that is chemically purer, low in iron, free-flowing and non-dusting. We can probably give you a bigger value for your money on your soda ash needs.

For quality, value and service, you, too, will be "sitting pretty" when you specify Westvaco® Alkalis.

CAUSTIC SODA
Liquid 73%
Liquid 50%, Regular
and Low — Chloride Grades
Flake, Solid and Ground, 76% Na_2O

CAUSTIC POTASH
45 and 50% Liquid; Flake and Solid

SODA ASH
Refined, Light and Dense
Natural, Light and Dense

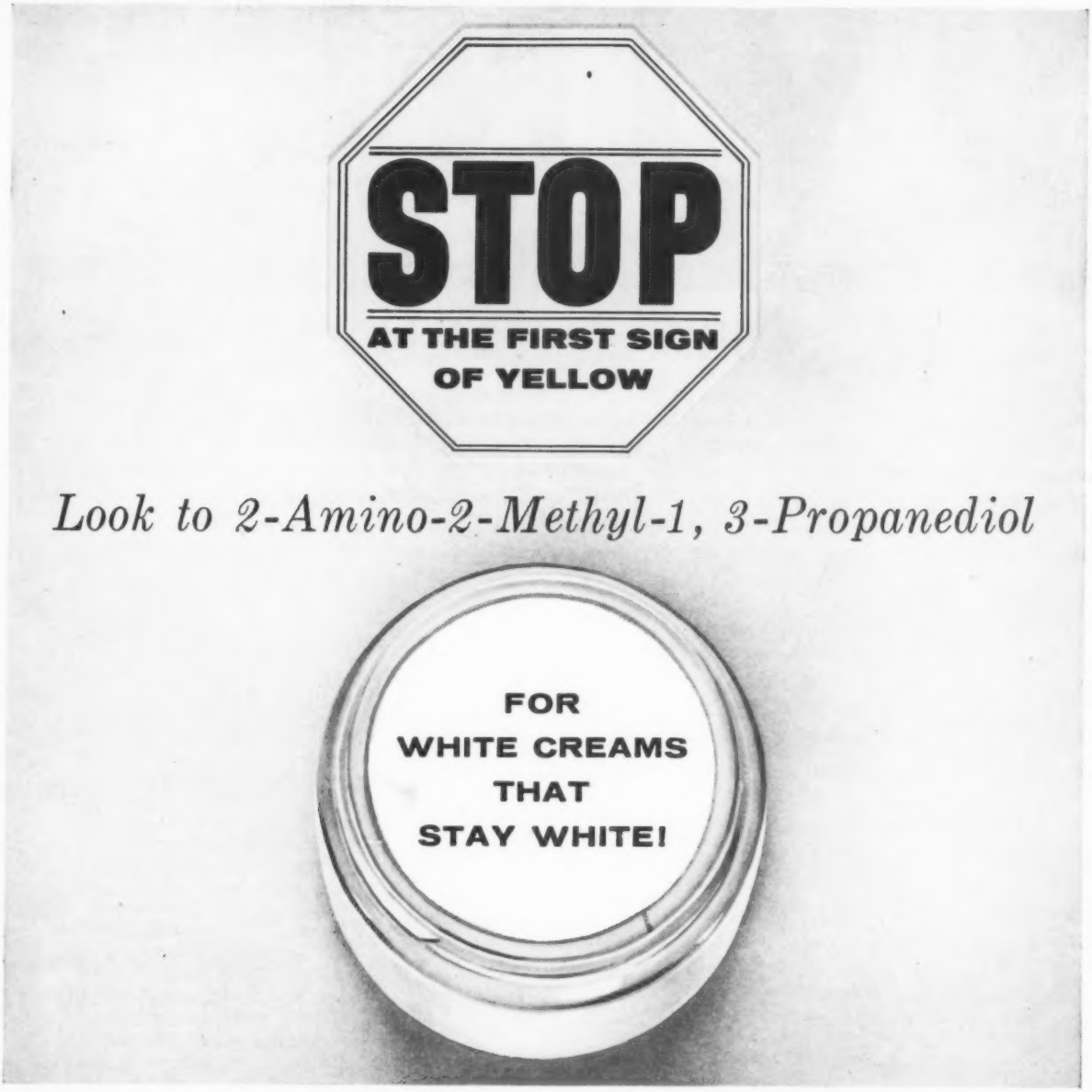
fmc®

Westvaco Chlor-Alkali Division
FOOD MACHINERY AND CHEMICAL CORPORATION

chemicals

161 E. 42nd St., New York 17 • So. Charleston, W. Va. Charlotte, N. C. Chicago Denver Philadelphia St. Louis

BECCO® peroxygen chemicals • FAIRFIELD® pesticide compounds • FMC® organic chemicals • NIAGARA® insecticides, fungicides and industrial sulphur • OHIO-APEX® plasticizers and resins • WESTVACO® alkalis, solvents, phosphates, barium and magnesium chemicals



Look to 2-Amino-2-Methyl-1, 3-Propanediol

White stays white! AMPD soaps are superior in stability of color and in freedom from yellowing or darkening – even after prolonged storage. Neutral soaps of this aminohydroxy compound possess unusually high emulsifying power and have no odor that will interfere with perfuming the final product. Creams made with this compound are remarkably free from oil "leakage". Consistency and texture of creams and lotions remain constant even after long periods.

For cosmetic creams and lotions, brushless shaving creams, hand lotions and mineral oil emulsions, put this superior emulsifying agent in your formula. Write today for samples and technical data sheet. We will be glad to give our recommendations on your particular emulsion problem.

PROPERTIES OF AMPD
(PURE MATERIAL)

Formula	$CH_2OHC(CH_3)NH_2CH_2OH$
Molecular Weight	105.14
Melting Point, °C	109 to 111
Boiling Point, °C	151 to 152 at 10mm
pH of 0.1M Aqueous Solution at 20°C	10.8
Solubility in Water g/100 ml at 20°C	250

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INDUSTRIAL CHEMICALS DEPARTMENT

COMMERCIAL SOLVENTS CORPORATION

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Boston • Chicago • Cincinnati • Cleveland • Detroit • Houston • Indianapolis • Kansas City • Los Angeles
Louisville • Memphis • Milwaukee • New Orleans • New York • Pittsburgh • St. Louis • San Francisco

In Canada: Reliance Chemicals, Ltd., Montreal *In Mexico:* Comsolmex, S. A., Mexico, 11, D. F.

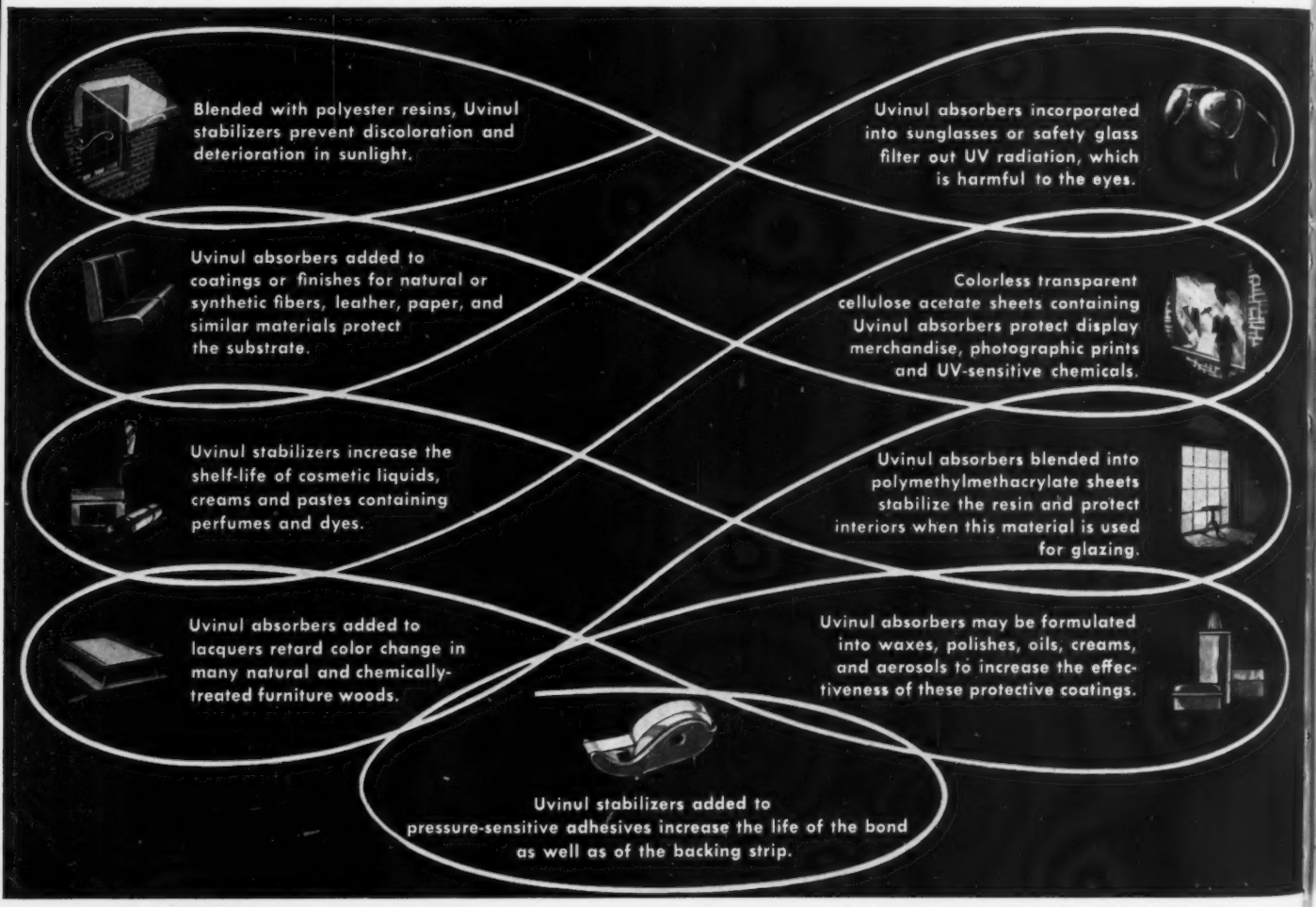
UVINUL®

400, 490, D49, M40

Permanently Prevent Deterioration and Discoloration caused by Ultraviolet Light

UVINUL ultraviolet absorbers and stabilizers can be incorporated into solid plastics and protective coatings to permanently prevent deterioration or discoloration caused by ultraviolet radiation. They are also effective as stabilizers for organic liquids and aqueous solutions.

Four Uvinul stabilizers, which differ in solubility and range of ultraviolet protection, are now available, permitting users to select the product best suited for their needs.


Blended with polyester resins, Uvinul stabilizers prevent discoloration and deterioration in sunlight.
Uvinul absorbers incorporated into sunglasses or safety glass filter out UV radiation, which is harmful to the eyes.
Uvinul absorbers added to coatings or finishes for natural or synthetic fibers, leather, paper, and similar materials protect the substrate.
Colorless transparent cellulose acetate sheets containing Uvinul absorbers protect display merchandise, photographic prints and UV-sensitive chemicals.
Uvinul stabilizers increase the shelf-life of cosmetic liquids, creams and pastes containing perfumes and dyes.
Uvinul absorbers blended into polymethylmethacrylate sheets stabilize the resin and protect interiors when this material is used for glazing.
Uvinul absorbers added to lacquers retard color change in many natural and chemically-treated furniture woods.
Uvinul absorbers may be formulated into waxes, polishes, oils, creams, and aerosols to increase the effectiveness of these protective coatings.
Uvinul stabilizers added to pressure-sensitive adhesives increase the life of the bond as well as of the backing strip.

THESE ARE BUT A FEW OF THE MANY USES OF THE UVINUL ABSORBERS. MORE DETAILED INFORMATION IS AVAILABLE UPON REQUEST.

From Research to Reality

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A SALES DIVISION OF

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Potassium Carbonate • Soda Ash • Sodium Bicarbonate
Sodium Nitrite • Caustic Soda
Caustic Potash • Snowflake® Crystals • Ammonium Chloride
Methylene Chloride • Methyl Chloride • Monochlorobenzene
Ammonium Bicarbonate • Carbon Tetrachloride • Hydrogen Peroxide
Ortho-dichlorobenzene • Cleaning Compounds • Vinyl Chloride
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Calcium Chloride

Whatever your product—from basic household or industrial cleanser to luxury bath preparation—SOLVAY's superior forms of sesquicarbonate of soda afford you a combination of advantages found in no other alkali. Available in two virtually dust-free granulations—Snowflake or Snowfine.

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☐ Snowflake Crystal sample ☐ Snowfine sample
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Dependable Kettle Quality

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Each of the Barrett Tar Acids and Tar Acid Oils is carefully standardized to help you attain uniformity from batch to batch.

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Barrett Chemicals for the Soap Industry

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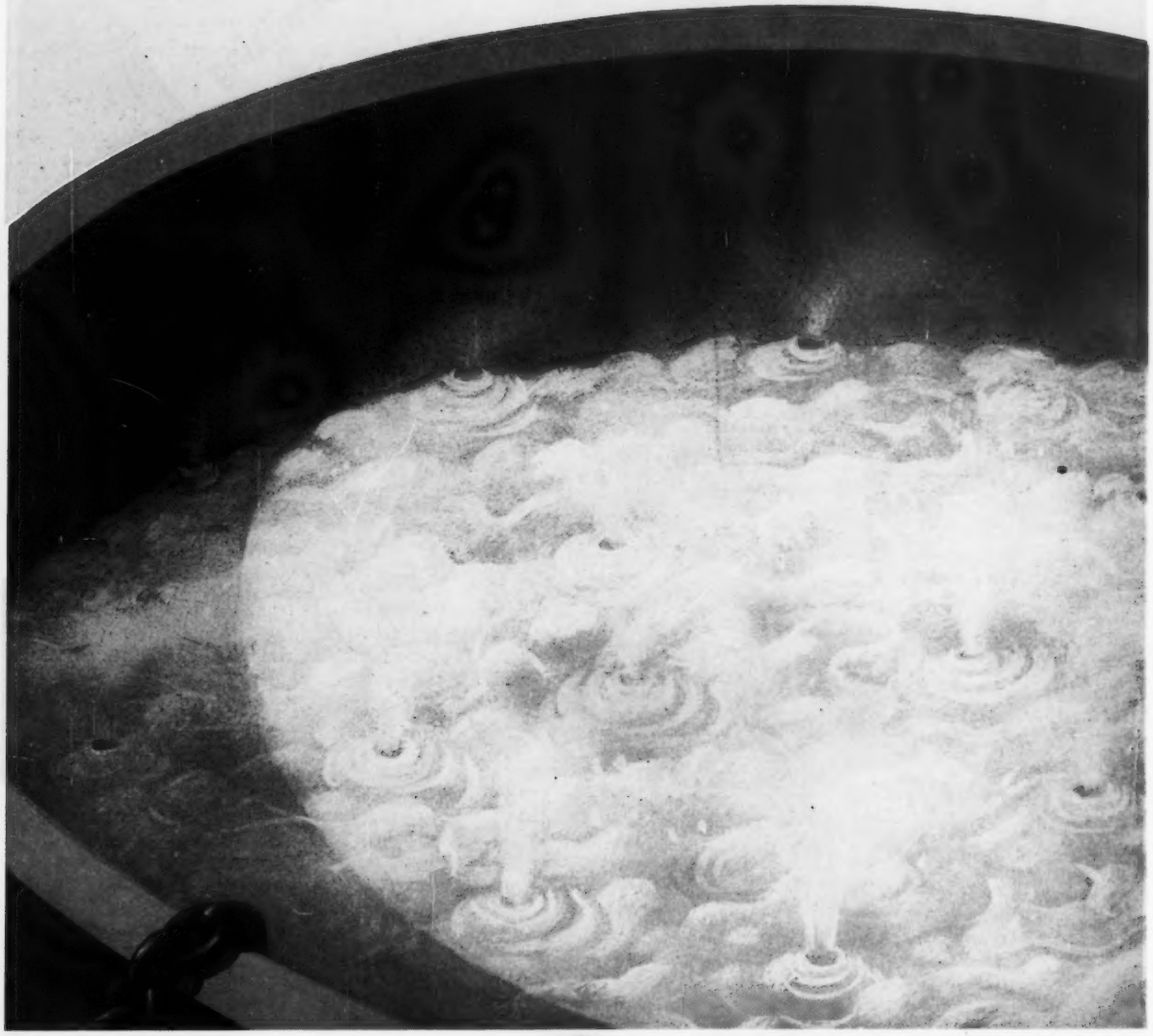
Tar Acids—Phenols, Cresols, Xylenols, Cresylic Acids
Aromatic Solvents
Phthalic Anhydride



Barrett®

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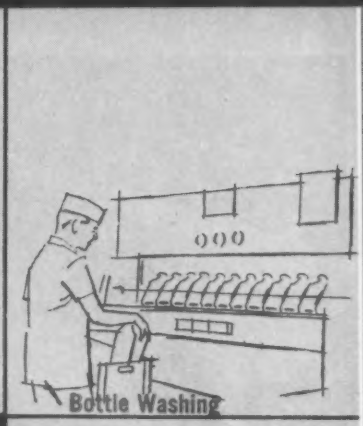
Allied Chemical

OVER 100 YEARS OF EXPERIENCE

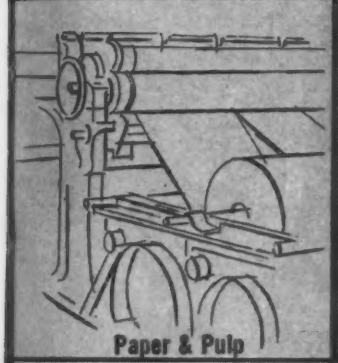


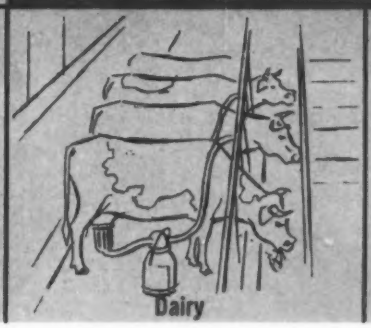
Suggestion for a surfactant processor who can see profit in these pictures

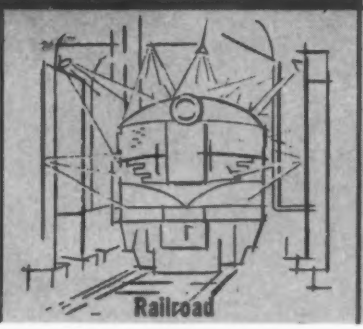
If you're compounding liquid or dried formulations of the alkyl aryl surface-active type, we suggest that you start with "the successful ingredient"

NEOLENE 400

the basic raw material used by the foremost detergent processors







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OIL-SOLUBLE SULFONATES—manufactured by sulfonation of synthetically produced hydrocarbon under closely controlled conditions.

CONOCO H-300—Secondary plasticizer for vinyls "the extender of profit"—outstanding light stability . . . improved low-temperature flexibility . . . viscosity depressant and stabilizer in plastisols.

CONOCO Petrochemicals

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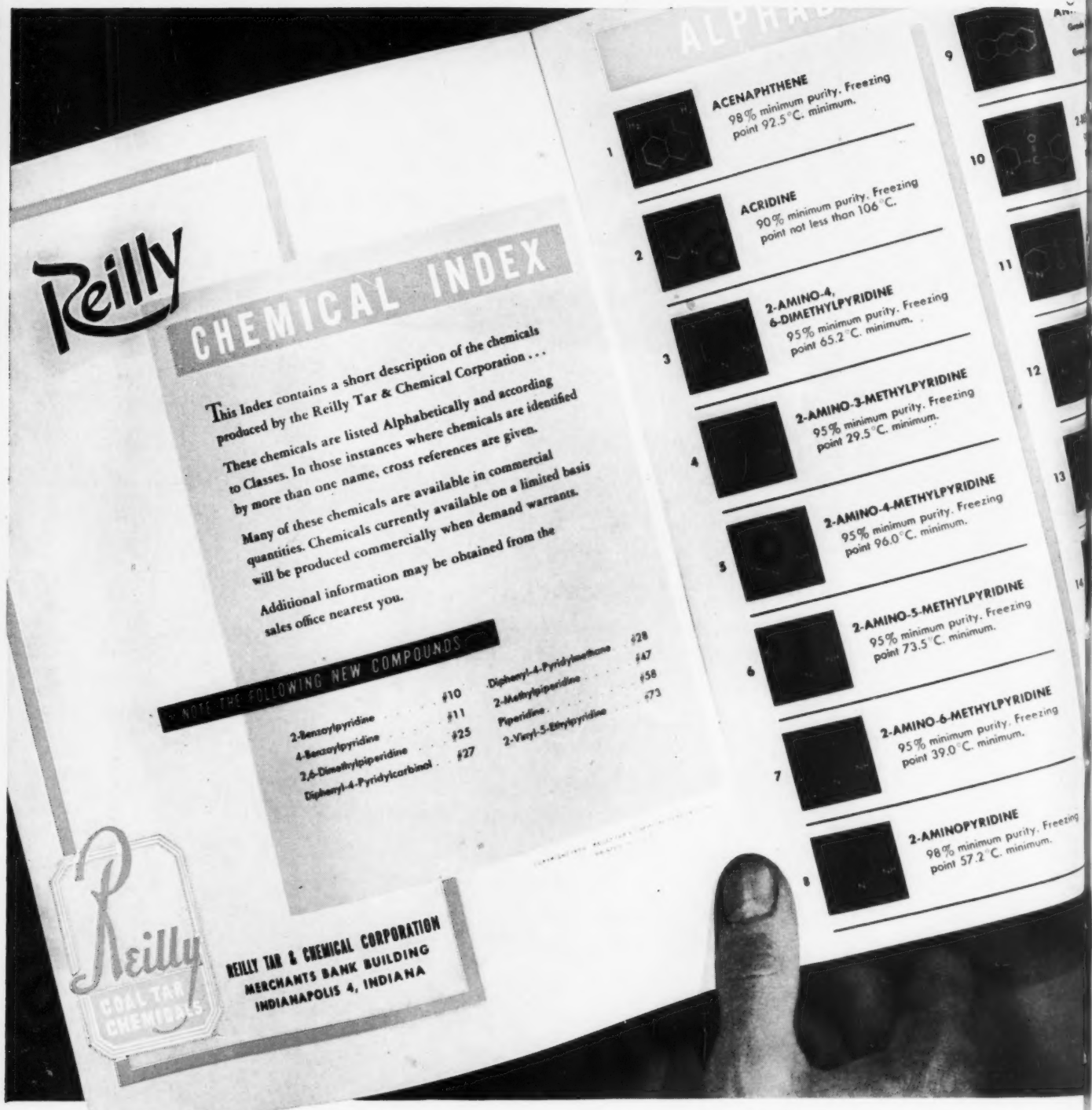
Reilly
CHEMICAL INDEX
This Index contains a short description of the chemicals produced by the Reilly Tar & Chemical Corporation...
These chemicals are listed Alphabetically and according to Classes. In those instances where chemicals are identified by more than one name, cross references are given.
Many of these chemicals are available in commercial quantities. Chemicals currently available on a limited basis will be produced commercially when demand warrants.
Additional information may be obtained from the sales office nearest you.
NOTE THE FOLLOWING NEW COMPOUNDS
2-Benzoylpyridine #10
4-Benzoylpyridine #11
2,6-Dimethylpiperidine #25
Diphenyl-4-Pyridylcarbinol #27
Diphenyl-4-Pyridylmethane #28
2-Methylpiperidine #47
Piperidine #58
2-Vinyl-5-Ethylpyridine #73
ALPHA
1 ACENAPHTHENE 98% minimum purity. Freezing point 92.5°C. minimum.
2 ACRIDINE 90% minimum purity. Freezing point not less than 106°C.
3 2-AMINO-4, 6-DIMETHYLPYRIDINE 95% minimum purity. Freezing point 65.2°C. minimum.
4 2-AMINO-3-METHYLPYRIDINE 95% minimum purity. Freezing point 29.5°C. minimum.
5 2-AMINO-4-METHYLPYRIDINE 95% minimum purity. Freezing point 96.0°C. minimum.
6 2-AMINO-5-METHYLPYRIDINE 95% minimum purity. Freezing point 73.5°C. minimum.
7 2-AMINO-6-METHYLPYRIDINE 95% minimum purity. Freezing point 39.0°C. minimum.
8 2-AMINOPYRIDINE 98% minimum purity. Freezing point 57.2°C. minimum.
9
10
11
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REILLY TAR & CHEMICAL CORPORATION
MERCHANTS BANK BUILDING
INDIANAPOLIS 4, INDIANA

Here's your 1957 edition ...GET IT *NOW!*

Contains a complete list—with a short description of the chemicals offered by Reilly. A copy of the Reilly Chemical Index is available upon request.

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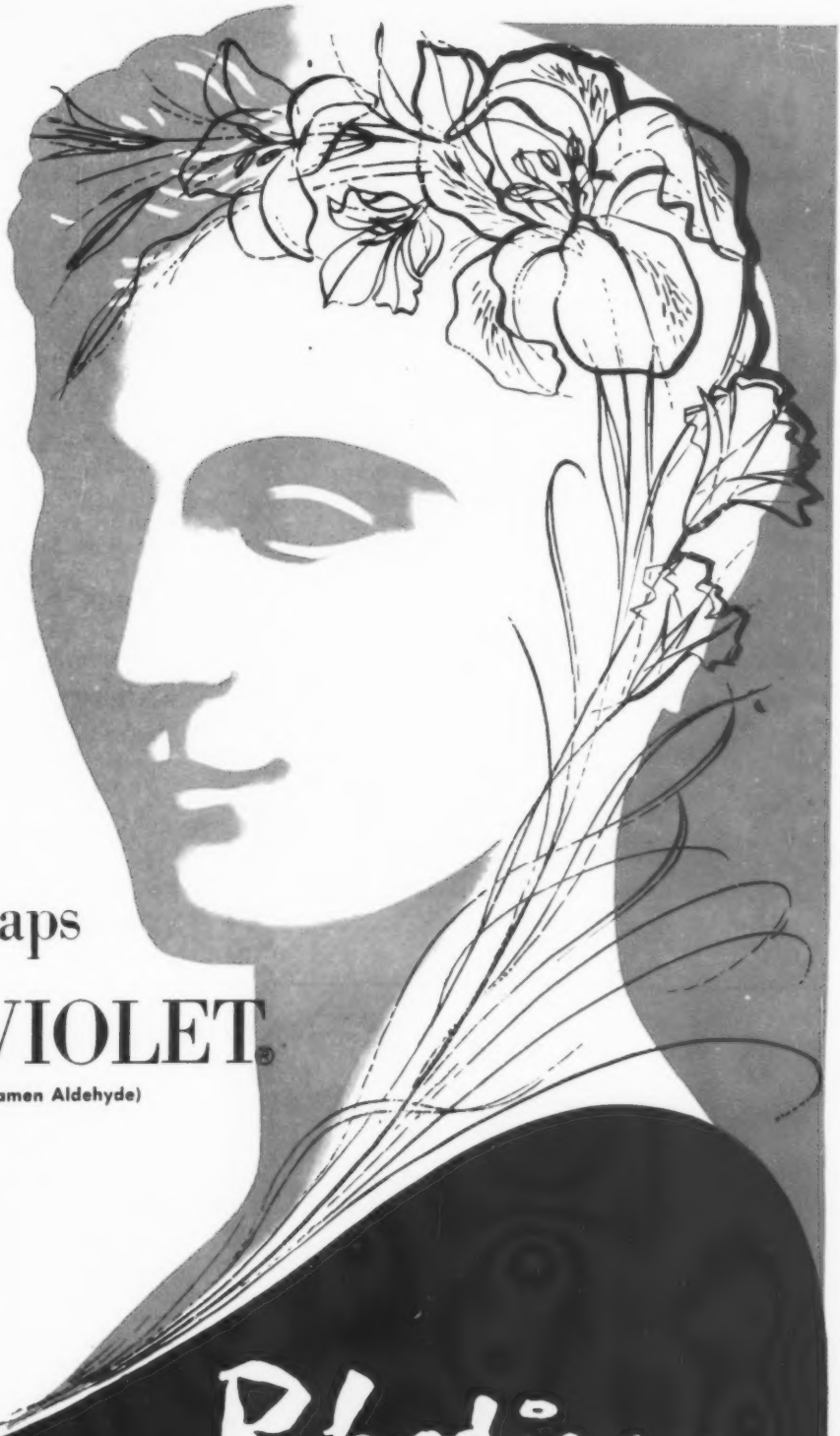

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the finest
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EXTRA	94 %
STANDARD	85 %
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Make STEPAN Your "SHQ"*

*(surfactant headquarters)

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Higher carbon chain fatty alcohol sulfates including sodium, ammonium, diethanolamine, triethanolamine and magnesium salts. These products offer a high degree of uniformity and are available in paste, liquid or powder form.

ETHOXYLATING

The new Stepan Plant near Joliet, Illinois, is fully equipped to serve your requirements for reactions involving a labile hydrogen atom and ethylene oxide. Also available is custom esterification involving fatty acid and an amide, alcohol or other similar compounds.

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Stepan offers a wide selection of fatty acid-amine condensate type of non-ionics as well as nonyl phenoxy polyoxyethylene ethanol type non-ionic detergent and emulsifiers for all types of cleaning formulations.

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The completeness of the Stepan line makes possible important savings. From this wide selection less than carload ingredients totalling a carload where suitable can be blended at small additional cost and carload price effected. Or, the individual items can be shipped as mixed carload at carload prices.

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Both conventional and new high purity alkylolamides. Stepan high purity amides have a guaranteed minimum amide content of 90%. Also amides to your specifications. Our large capacity may well effect important savings for you.

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The Stepan Chemical Company has complete laboratory facilities to assist you in every way possible toward developing the product most suitable to your needs. Our technical staff will also be pleased to consult with you on new products as well as new applications of our present products.

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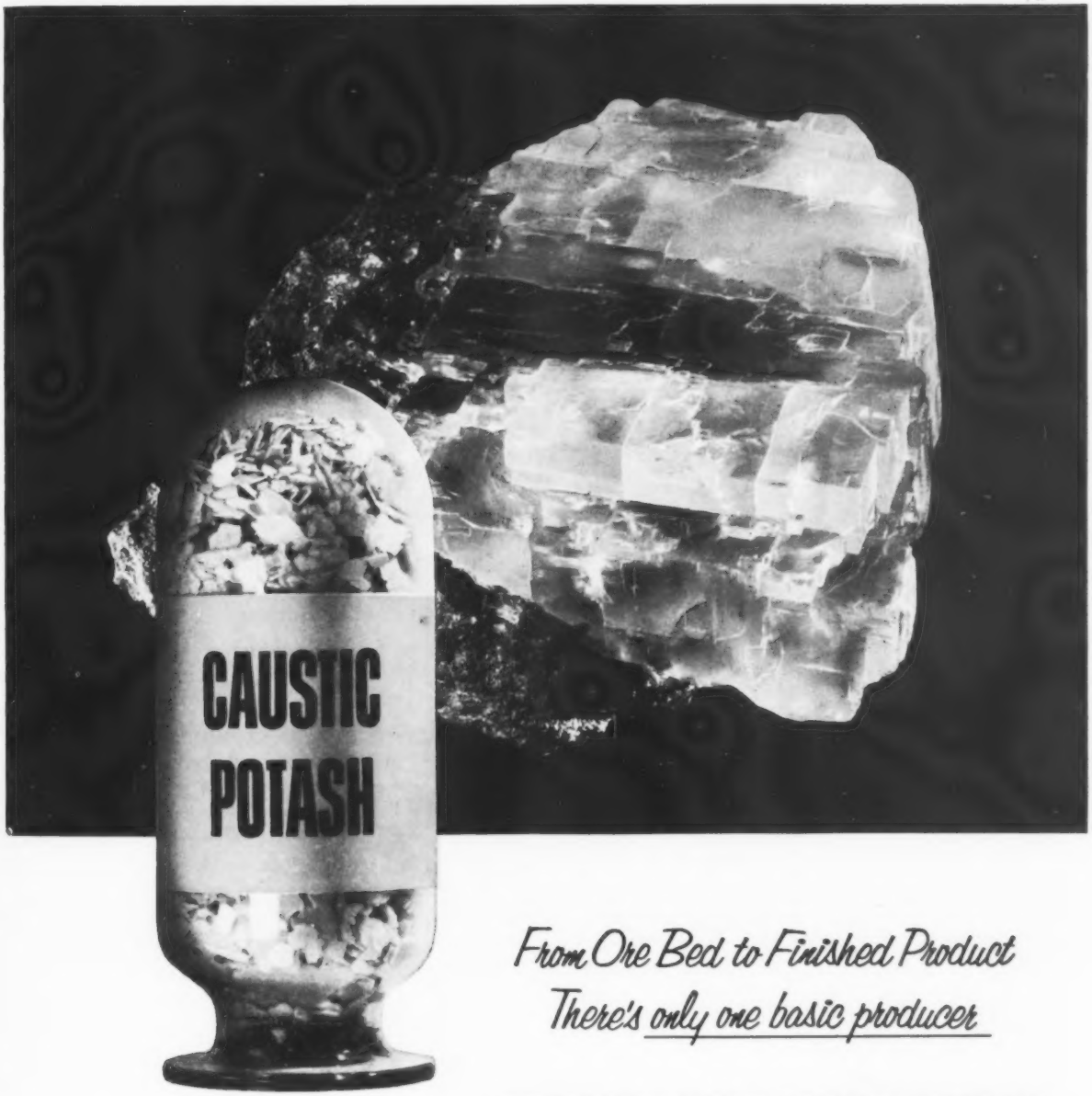

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MANUFACTURES
CAUSTIC POTASH – KOH

You get important "extras" from International, the *one basic producer of Caustic Potash.* Unquestioned security of supply. Uniform quality. High purities. All standard grades. Prompt shipments.

99.95+% pure electrolytic grade KCl is refined at Carlsbad from sylvite ore and shipped to Niagara Falls for the production of KOH and other potash salts. Call the office near you for fast service.

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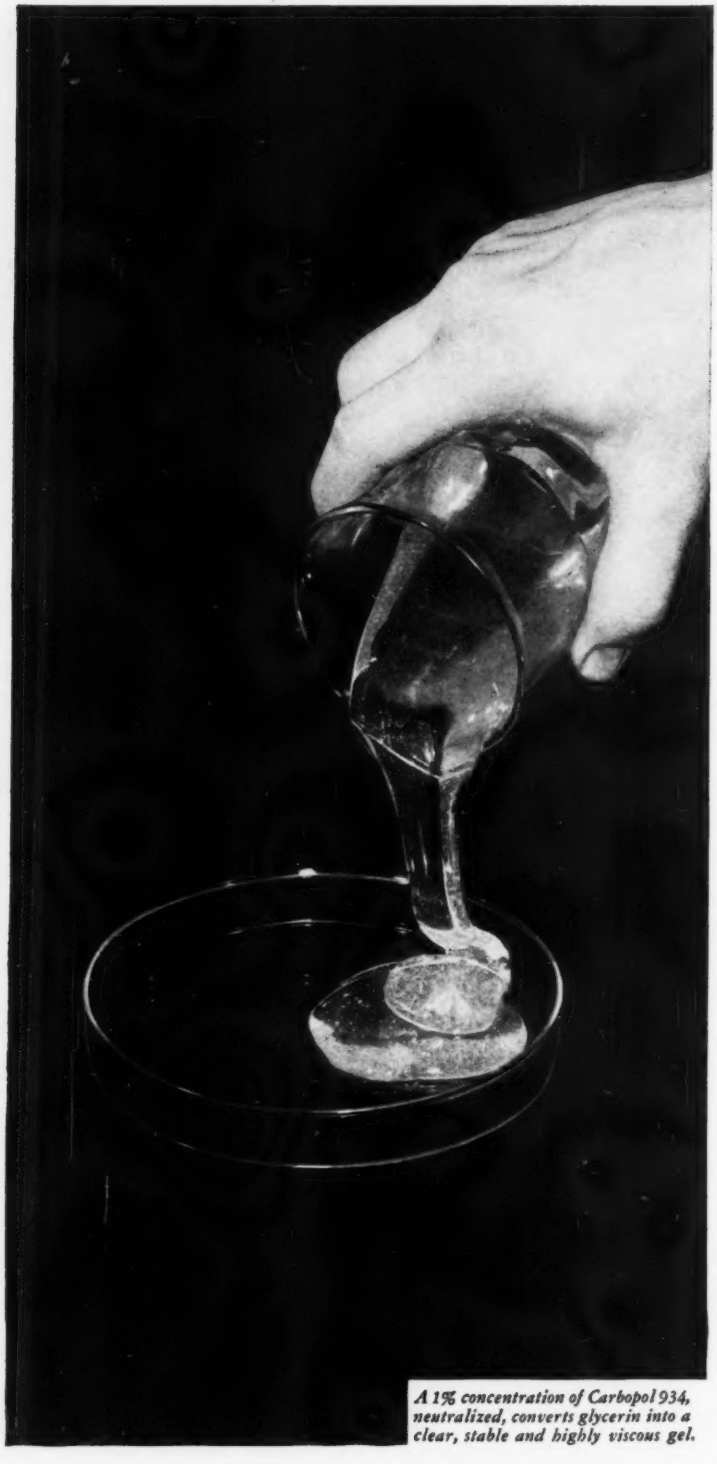
News about

B.F.Goodrich Chemical *raw materials*



A 1% concentration of Carbopol 934, neutralized, converts glycerin into a clear, stable and highly viscous gel.

CARBOPOL 934

makes clear, stable glycerin gel

A mere 1% Carbopol concentration, after neutralization, turns glycerin into a clear, stable gel that is ideally suited for cosmetic and pharmaceutical formulations.

The stability of this gel toward aging is outstanding; that pictured here was a year old. It is also resistant to bacterial and fungal degradation.

Because Carbopol 934 is man-made, its purity and uniformity are consistent. It provides far higher viscosities at low concentrations than does any other thickening agent. Used with USP Glycerin, it produces non-irritating and non-allergenic gels that are evenly textured and very smooth in appearance and to touch.

Carbopol 934 is supplied as a white powder that is readily dispersed in both water and glycerin by mechanical action. For experimental samples and technical information, write Dept. KC-3, B.F.Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

Good-rite

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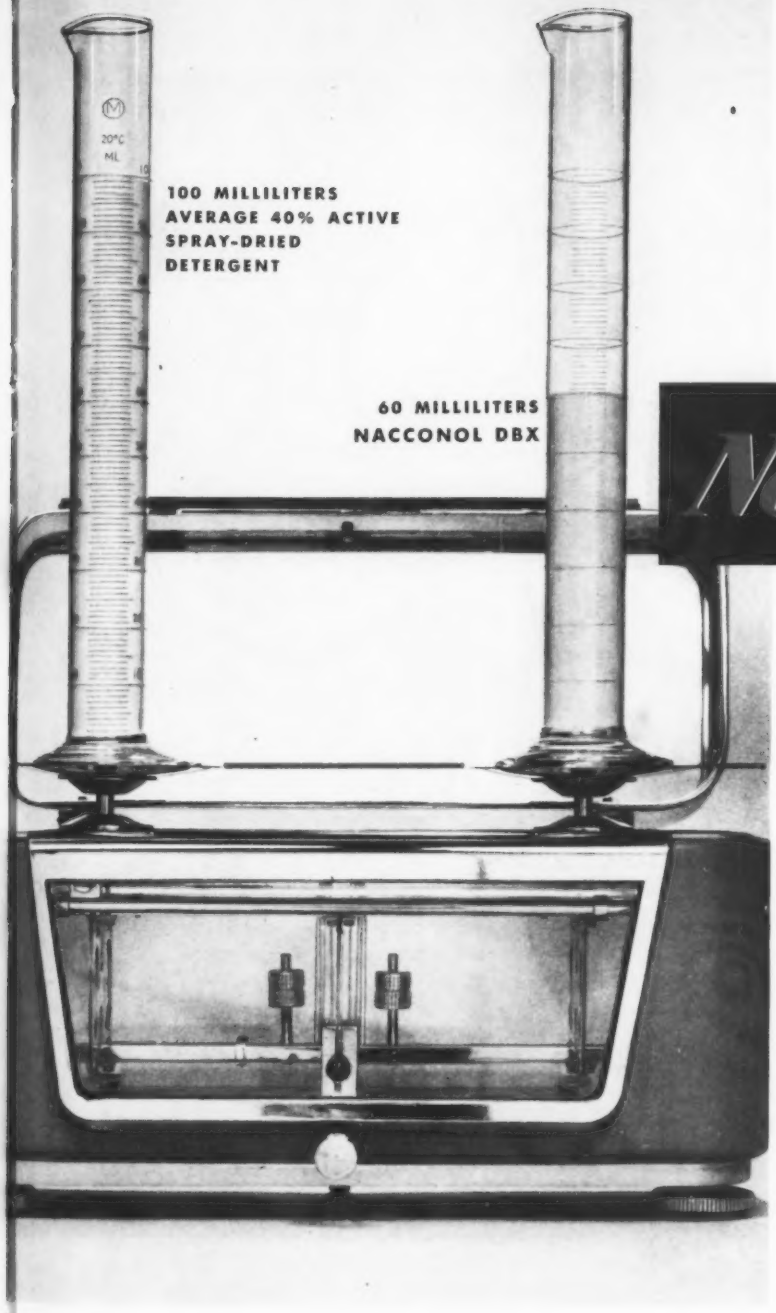

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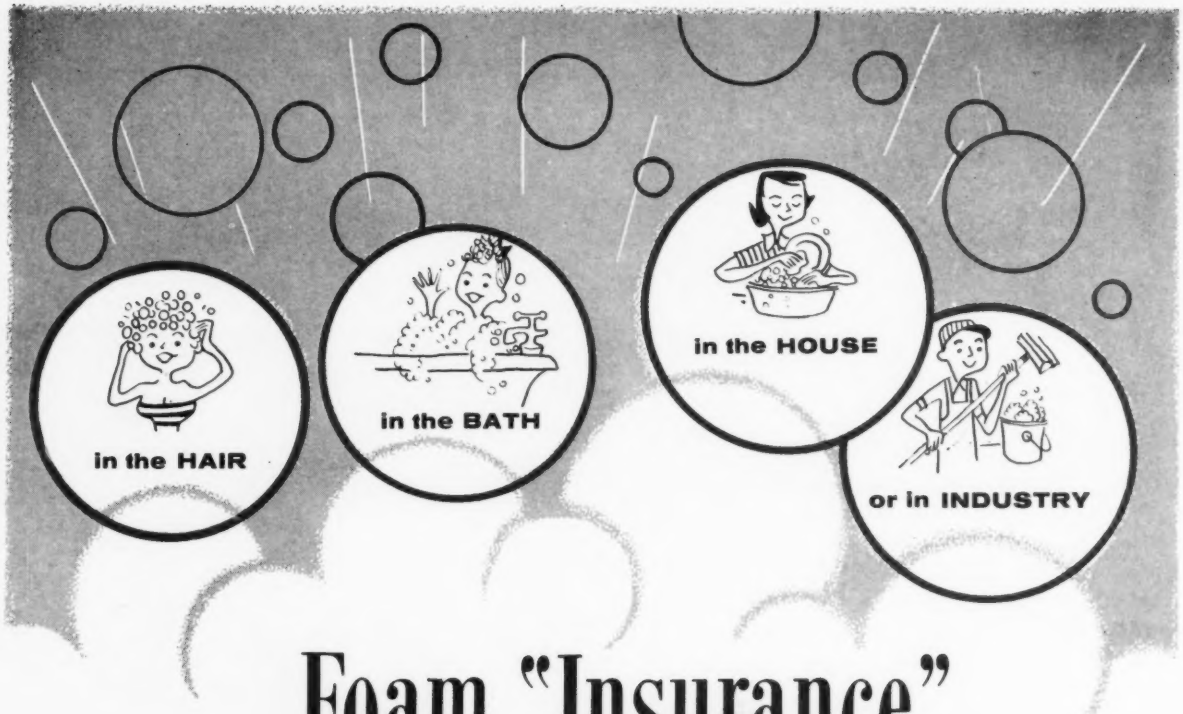

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TEAM-MATES • *EMCOL 5100 SERIES . . . non-ionic fatty alkanolamides for non-ionic detergents, thickeners, foam enhancers and emulsifiers (full details in Technical Bulletin #44)*

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Oil Mimosa No. 615
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LIQUID SOAPS

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Oil Mint No. 523
Oil Narcissus No. 614
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SHAMPOO ODORS

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Oil Bouquet Almond No. 8262
Oil Clover No. 888
Oil Corylopsis No. 55
Oil Bouquet H.O. No. 8267
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Oil Bouquet Narcissus No. 55
Oil Bouquet Wild Rose No. 55
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AEROSOL BOUQUETS

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Oil Lilac No. 4315
Oil Narcissus No. 4316
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... about detergents

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by E. G. Thomssen and John W. McCutcheon

THE latest and only complete American book on soap and detergent manufacture. This 511 page practical text is designed for the production man, chemist or executive and covers such subjects as soap making methods, equipment and machinery, raw materials, perfuming and coloring, glycerine recovery, and properties and applications of finished soap and detergent products. No soap or detergent laboratory, plant or office should be without this standard volume.

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SURFACTO "MA"

modified coconut alkanolamide condensate

the FLOOR CLEANER BASE with easiest formulating characteristics greatest hard water resistance

Surfacto "MA" formulates readily in most instances without the need of an additional coupling agent. You carry less inventory and save on labor costs. And as for hard water resistance —the performance of formulated "MA" is actually enhanced when a small quantity of soap is present in hard water.

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Extremely Versatile

"MA" can be formulated with a tremendously wide range of alkalis—you produce the pH formula best suited to your requirements—mild, general purpose, high-alkali, or high or medium pH wax strippers. Tailor the cleaning compound through pH characteristics from 8.7—12.7.

Attractive Appearance

Surfacto "MA" is a clear viscous amber.

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"MA" produces copious but unstable foam for quick, easy pickup.

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Expert technical assistance is available to you at any time to help solve old problems or work closely in the development of new compounds.

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Facilities of this company include bulk raw material storage in excess of 100,000 gallons, and plant capable of processing yearly in excess of 20,000 barrels of alkanolamide condensates and 40,000,000 pounds of completely formulated liquid detergents and concentrates.

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Surfacto "60"—for finest dish and car wash detergents—an aqueous solution of alkanolamine neutralized alkyl aryl sulfonate with a foam stabilizer of coconut alkanolamide condensate built in, to give maximum foam with high stability under heavy soil loads.

Surfacto "56"—a completely formulated floor cleaning synthetic concentrate designed for those compounders with limited production facilities. Mere addition of water with agitation gives a completely formulated floor and hard surface cleaner.

Surfacto "MA" — Specifications

Moisture (Karl Fischer)	1-2%
FFA (calc. as oleic)	22-25%
Haze Point	12° F.
Specific Gravity	1.028 (8.56 lbs./gal.)
pH—5% solution	8.9—9.0
Solubility in Water	All Proportions
Appearance	Amber, Viscous Liquid

For price lists and additional data

mail this coupon today

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Gentlemen: Please send additional information about
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POLYBOR ®

MANUFACTURERS OF FAMOUS "20 MULE TEAM" PACKAGE PRODUCTS ®

Do you have a SURFACE ACTIVE AGENT problem?

Then consult MIRANOL

MIRANOL is the pioneer in the field on non-irritating amphoteric surface active agents. Years of research and development have made MIRANOL AMPHOTERIC SURFACTANTS outstanding in versatility and performance. Numerous useful and desirable properties are combined in single economical products. MIRANOL surface active agents have wider versatility than any other synthetic detergent type available today.

Six leading derivatives are in full production. Each of these outstanding products has particular significance and purpose. In addition to unusual stability and compatibility features, other highly interesting advantages are as follows:

a) Perfectly stable from pH 1 to 14, even under boiling temperatures.

b) Tolerance for 20% and more alkalies and/or electrolytes. For acids, tolerance is even higher (depending on acid) . . . as high as 90%. Clear liquid products can be formulated in this manner.

c) MIRANOL "M" SERIES SURFACTANTS are the only amphoteric surface active agents fully compatible with anionic, cationic and non-ionic agents in all proportions.

d) Use of MIRANOL surface active agents in cleaning compounds used by hand can eliminate all skin irritation, depending on the individual formulation.

OUR SIX LEADING SURFACE ACTIVE AGENTS

MIRANOL CM. CONC.
Coconut Monocarboxylic Derivative

MIRANOL C2M CONC.
Coconut Dicarboxylic Derivative

MIRANOL SM CONC.
Capric Derivative

MIRANOL OM-SF CONC.
Oleic Derivative

MIRANOL HM CONC.
Lauric Derivative

MIRANOL DM
Stearic Derivative

The possibilities are endless for MIRANOL surface active agents. If you have a product problem . . . consult us. Benefit from our years of experience in solving those "unsolvable" problems. Let us recommend to you the particular MIRANOL SURFACE ACTIVE AGENT that will meet your most exacting requirements.

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In Restaurant Cleansers Too,
THE KEY IS CMC

Lakeseal RESTAURALL utility detergent powder utilizes the unique dirt-suspending properties of CMC to keep restaurant fixtures gleaming bright. By adding Hercules® CMC to this and other detergent formulations, Finger Lakes Chemical Co. insures uniformity of cleaning action and dispersion of ingredients. Hercules CMC helps to 'float away' grease and grime particles loosened by detergent action, makes detergent formulations more effective.

CMC has found wide application in soap and detergent products marketed by leading manufacturers. As a suspending agent, water binder, viscosity control agent, or film-former, CMC is being utilized in the manufacture of paper, ceramics, textiles, and pharmaceuticals. Perhaps Hercules CMC can improve the efficiency of your product and enhance customer acceptance. Write Hercules for a sample quantity of CMC and complete technical information, mentioning products you market.

FLOATS GRIME AND GREASE AWAY
Restaurall detergent powder is a special formulation for all restaurant cleaning needs marketed by Finger Lakes Chemical Company, Etna, New York.

Virginia Cellulose Department
HERCULES POWDER COMPANY
INCORPORATED
961 Market Street, Wilmington 99, Delaware

V597-1

. . . in brief

ANTIFREEZE. . . . Sales of antifreeze for automotive use topped 107 million gallons in 1956, according to the results of a survey recently released by the Chemical Specialties Manufacturers Association. This antifreeze had an estimated retail sales value of about $275,000,000. Volume was some 2.8 per cent below the figure for 1955. Close to 80 per cent of antifreeze sales were of the permanent ethylene glycol type in 1956, the balance being methanol and other non-permanent products. It was estimated that close to 62,000,000 vehicles were serviced during the period.

Significant in antifreeze sales in 1956 was a further trend toward the purchase of material in branded, sealed containers. Over 95 percent of all sales of permanent-type products were in sealed cans, only 5 percent in bulk. In the case of methanol and other cheaper non-permanent products, a third of all sales were from bulk containers, the balance in sealed cans. The trend obviously is toward spending more money for the better products and the higher degree of protection which they give. This may be tied right in with the larger investment which the average motorist or fleet owner has in motor vehicles today.

* * * * * *

BUSH BILL . . . Last month, the much-discussed Bush Bill to regulate interstate distribution and sale of hazardous articles in packages suitable for household use, was introduced in the U. S. Senate as S. 1900. This bill is otherwise known as the "Federal Hazardous Articles Act." It defines a hazardous article as one which is toxic, corrosive, irritating, flammable, radioactive or which generates pressure and when used correctly can cause bodily injury. It calls for formula disclosure on the label, use of a signal word such as "danger," "warning," or "caution," and an antidote or first-aid treatment. Products which are subject to the Food, Drug and Cosmetic Act and the Insecticide, Fungicide and Rodenticide Act, and agricultural products are exempt.

A study of the bill indicates that it should cause no particular hardship to any manufacturer of chemical specialties. If it does, there is a section of the bill which may exempt such products. Justified or not, public clamour over the past year or so has demanded this action by Congress. The introduction of such a bill has been inevitable. We understand that it stands a good chance of being passed. That the chemical specialties people must accept it goes without saying. Under present circumstances, far more severe legislation could have been a reality. We feel that the industry can live with this law.

* * * * * *

PRIVATE LABEL . . . From the West Coast, we have word that the inroads of private label detergents on nationally advertised products is causing more than a raised eyebrow or two. Supermarket operators are reputed to claim that they can sell a large package of private brand detergent at twenty cents under the national product and still make money. And the funny thing about the deal is that a number of the large soapers, the owners of the advertised brands, are doing most of the supplying of the private brand stuff.

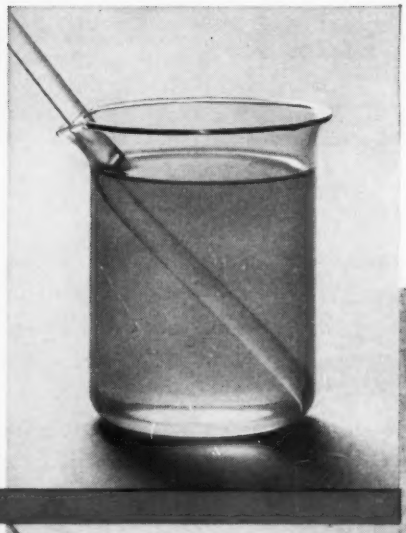
Some supermarkets also literally tie-in the sales of their private brand detergents with nationally advertised products, actually by strapping a small package of the private brand to a larger package of the national brand item and selling the whole deal for the usual price of the national brand. This idea is reported to have caught on quickly

WHICH sodium silicate suits your process best?

Opalescent Solutions

Baumé	Wt. Ratio (Na_2O to SiO_2)
38° Pearl	1:3.25
40° Regular	1:3.25
41° Acme	1:3.25
42.5° Ajax	1:3.25
47° Ideal	1:2.84
52°	1:2.40
60°	1:2.00

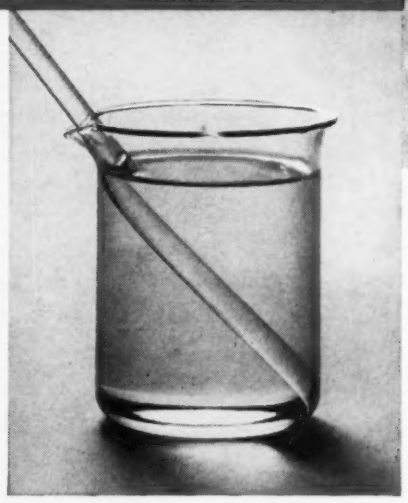
And other ranges of Baumés



Clear Solutions

Baumé	Wt. Ratio (Na_2O to SiO_2)
38° Crown	1:3.25
38° Gem	1:2.54
40° Peak	1:3.22
41° Water White	1:3.25
42° Silk	1:2.54
42.5° Water White	1:3.25
44° Perox	1:1.80
52° Zenith	1:2.40

And other ranges of Baumés



Glass: Block form

***Also*—Sodium Metasilicate Crystal and Anhydrous for Detergents and Heavy Duty Cleaning Uses**

General Chemical offers every grade of SODIUM SILICATE

For any grade and any strength you need, see General Chemical! Solutions are supplied ready to use. No elaborate mixing equipment necessary. Special grades prepared to your specifications.

Solutions available in 55-gallon drums, tank cars and tank trucks. Glass shipped in bulk and bags. Consult your nearest General Chemical office for any special grades you may need.

Call or write today!

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ALLIED CHEMICAL & DYE CORPORATION
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Offices: Albany • Atlanta • Baltimore • Birmingham • Boston • Bridgeport • Buffalo • Charlotte • Chicago • Cleveland • Denver • Detroit • Greenville (Miss.) Houston • Jacksonville • Kalamazoo • Los Angeles • Milwaukee • Minneapolis • New York • Philadelphia • Pittsburgh • Providence • San Francisco • Seattle St. Louis • Yakima (Wash.) **In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver**

and in a big way, and to have caused no little consternation among some marketers.

As far as we know, this scheme has not yet hit the east coast. But, before the ink is even dry on this page, we'll gamble that somebody in the east will be planning to climb on this unique merchandizing bandwagon. What next in this soap-selling dog-fight? We wonder if the blokes who think up these ideas ever sleep nights.

* * * * * *

THEY'RE OFF! A full scale advertising blast for a leading synthetic detergent toilet bar has hit television, newspapers and magazines as anticipated. Whether this marks the first knell of the demise of toilet soap remains to be seen. Two or three times before synthetic bars have been launched sectionally, but did not do too well. This new one, however, we hear is a much better product. Certainly, its advertising in the newspapers is designed to knock milady's hat off. In fact, after years of reading soap company advertising, it just about knocked our hat off too.

As expected, the new toilet bar leaves no bathtub ring. Neither does it leave your skin so dry like soap does. As a matter of fact, it "creams" your skin as you bathe. In fact, it's "so wickedly creamy" that it makes Cleopatra and her mares' milk bath of history look like a couple of pikers. And the bar is "me-shaped" to fit the hand so it doesn't "keep slithering away in the tub." The dame in the pictures shown in the advertising admits that she's the "most spoiled, girliest girl in the world" after one bath with the stuff.

Yes, sir, this first advertisement means business in the synthetic toilet bar field. We have a hunch, it's the first big gun in still another battle royal to come in the soap business.

* * * * * *

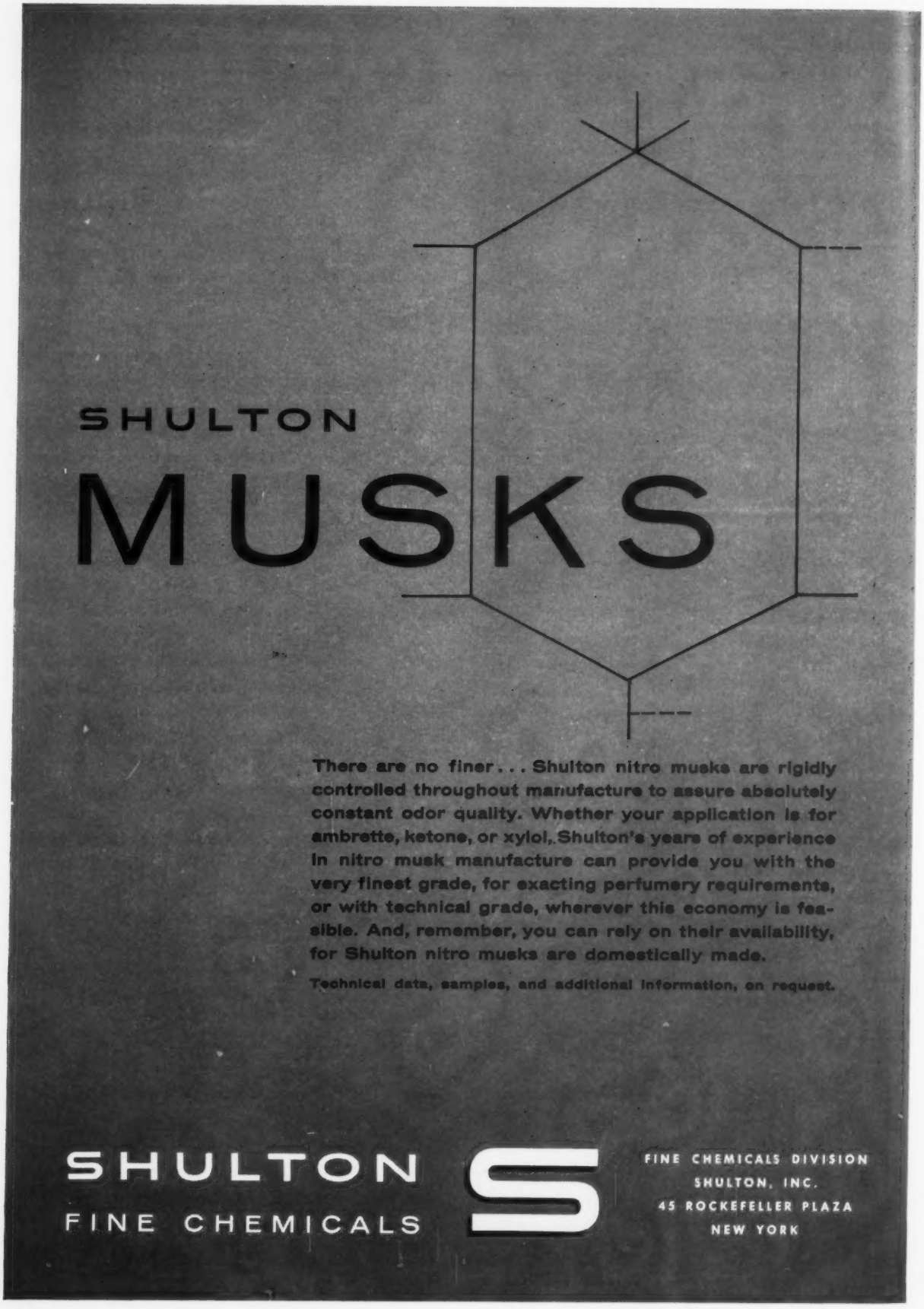
AEROSOLS . . . Lest we forget, it was just ten years ago that light weight aerosol containers became a commercial reality and started the real upsurge in aerosol production and use. Starting practically from scratch in 1947, pressure packaging showed a remarkably rapid development reaching an estimated 300 million units last year. Prior to 1947, only the heavy bomb-like aerosols were available and the price for a one pound household insecticide unit varied between four dollars and four-fifty. Oh, yes, the "bombs" were returnable and all that — but who wants to be bothered with a returnable container of any kind?

Little doubt exists that without the low-cost light weight can, pressure packaging would have died aborning. The heavy-duty aerosol "bombs" were fine for war use where costs did not have to be watched too closely, but as a subsequent commercial proposition, they had little to recommend them. The price was simply too high. We pointed out this fact right here at the time, but we must admit the aerosol enthusiasts didn't like our saying so. No matter what else happened, it took the cheap aerosol can to put across pressure packaging as it is today. So to the fellow, or fellows, who developed this can, whoever he or they may be, the aerosol boys should be paying homage today.

* * * * * *

BRAKE FLUIDS . . . Because it considers them dangerous for bigger, more powerful modern automobiles, The Society of Automotive Engineers has withdrawn approval of lighter duty brake fluids. The Society recently announced that only heavy duty brake fluids are safe for most 1955, 1956 and 1957 model cars. SAE tests show that a new model car stopped repeatedly at high speeds may generate brake fluid temperatures of 250 degrees or higher. Moderate duty fluids, according to SAE specifications, have a minimum boiling figure of 235 degrees and accordingly can cause complete brake failure in modern cars. Hence the withdrawal of SAE approval.

Already eight states have adopted legislation forbidding the sale of all except SAE specification heavy duty brake fluids, recognizing the dangers involved in the use of moderate duty and substandard fluids. The withdrawal of SAE approval of moderate duty fluids will undoubtedly encourage other legislatures, now studying brake fluid regulations, to follow the lead of these eight states. With the prestige of SAE behind the move, we feel that it should be only a question of a relatively short time when the lighter brake fluids will be off the market on a nationwide basis.


SHULTON
MUSKS
There are no finer . . . Shulton nitro musks are rigidly controlled throughout manufacture to assure absolutely constant odor quality. Whether your application is for ambrette, ketone, or xylol, Shulton's years of experience in nitro musk manufacture can provide you with the very finest grade, for exacting perfumery requirements, or with technical grade, wherever this economy is feasible. And, remember, you can rely on their availability, for Shulton nitro musks are domestically made.
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SHULTON, INC.
45 ROCKEFELLER PLAZA
NEW YORK

as the reader sees it . . .

No Soap; No Soap

Editor:

Because of the fact that we have discontinued the manufacture of soap, we ask you to kindly cancel our subscription to *Soap and Chemical Specialties.*

Your magazine is certainly well worth the price, but as we have no further use for the information it contains, we have decided to cancel our subscription.

Thank you for your past years of service.

C. C. Goring,
President
Ontario Lubricating Co., Ltd.
Hamilton, Ont.

---★---

We Slipped

Editor:

In the April issue of *Sope*, a paper was published on the subject of "Slip Testing of Floor Waxes." While the authors names were correctly given in the table of contents, an error was made in the body of the article. You credited James D. Burns instead of George D. Burns as co-author. Jimmy appreciates the kudos but he didn't contribute a drop of sweat to the article.

George D. Burns,
Section Leader,
Product Development Dept.
Foster D. Snell, Inc.
New York.

Because we were concentrating on the James in the slip testing machine of the same name, we inadvertently changed Mr. Burns' first name. It was one of those days when we should have stayed home —James. Our readers will also note Mr. Burns' retaliation calling us "Sope" instead of "Soap." Ed.

---★---

Resin 100% Active

Editor:

We wish to express our appreciation for your further courtesy in printing in your April 1957 issue, a news item describing a "New Glyco Resin."

Unfortunately, in the next to closing sentence of this item you describe the resin as being "a ten per cent water solution, it is neutral in color and almost odorless.'

I do not know how this inaccuracy was inadvertently introduced, but please be advised that this resin is a solid, 100 per cent active, and is practically odorless. It is true that it does dissolve readily in water and a ten per cent solution of the resin in water would be substantially water-white and odorless.

If you have an opportunity, we would appreciate it if you would note such a correction in your next publication.

Eugene McCauliff,
Vice-President,
Glyco Products Co.
New York.

To Dr. McCauliff and Glyco, our apologies. Evidently the word "in" should have appeared before the phrase "a ten per cent water solution." Ed.

---★---

Poison Control Centers

Editor:

There were two items of interest which I noted in the February, 1957 issue of *Soap and Chemical Specialties.* One of these was a news item on page 18 concerning the new Poison Center in Connecticut. Do you know of any other poison centers, especially in the middle Atlantic states?

I also noted on page 35 that the Association of American Soap and Glycerine Producers, Inc., is reprinting the booklet, "The Prevention of Occupational Skin Diseases," by Dr. Louis Schwartz. Please tell me how I can obtain a copy of this booklet.

Winthrop C. Wolfe,
Chemist,
Surface Chemistry Section
Division of Chemistry
U. S. Dept of Commerce
Washington 25, D. C.

At latest count there were approximately 60 poison control centers in leading cities throughout the United States. To Reader Wolfe and others who might be interested, we suggest contacting Dr. J. L. Goddard, Chief, Accident Prevention Section, United States Public

(Turn to Page 255)

Dr. Ernest Theimer (center) of van Amerigen-Haebler, Inc., New York, was featured guest on recent Arlene Francis TV "Home Show." Dr. Theimer's appearance was part of national celebration of Chemical Progress Week. He emphasized that through chemical research modern perfumers now have more than 2,000 aromatic chemicals available for their use. The program was telecast over 117 stations of the NBC network and is seen by an estimated 2,700,000 viewers on an average day.

DOW

"Locked in the Versene claw"—that's the fate of metal ions when they encounter chelation. They become trapped within the inner ring structure of a newly formed compound where they cannot hinder processing or mar product quality. This phrase is taking on new meaning for detergent manufacturers, as the chemistry of chelation is reviewed.

The Chemistry of Chelation: Part IV

Applications in the detergent industry · Hard Soaps Liquid Soaps · Syndets · A new kind of chemistry?

As has been discussed previously, the Versene® series and Versenol® series chelating agents will inactivate practically all metal ions they contact in solution. The pH factor of the solution or of the finished product influences the choice of agent. To control iron in caustic solutions, look to Versene T®; in alkaline solutions—Versene Fe-3 Specific®; in acid—the Versene series. Or if solutions drift from one pH value to another, an effective Versene combination can be devised. If the right Versene or combination is properly used, processing is improved, and exceptional results are realized. For, unlike polyphosphates that lose effectiveness in alkaline media and at high temperatures, the Versene remains stable; is many times more effective; and can be used alone or with polyphosphates in the formulating of practically all forms of detergents.

HARD SOAPS

The old stand-by, soap, is still the best emulsifier for greases and oils. And with Versene formulated into the product, calcium and magnesium ions become inactivated in solution; no hard-water soap scum can precipitate. In laundry soaps, this chelation action also means that insoluble deposits from previous washings are removed from the laundered cloth. At the same time, the cloth's original softness is restored. Proteinaceous soil is easily solubilized.

The use of such a Versene-formulated product often eliminates the bleach operation and several rinses in power laundries.

LIQUID SOAPS

Chelating agents improve liquid soaps in several ways. To begin with, a Versene-compounded product made using tap water has the same clarity as one made with distilled or rain water. Such soaps are lighter colored and protected against rancidity and change of color. In addition, silica deposit is retarded when the soap is stored in glass. Concentrated liquid soaps which can be diluted with hard water are obtained through use of additional Versene.

Because Versene inactivates all the metallic salts which produce insoluble soaps, the filtration step of the manufacturing process is simplified. Chilling is eliminated, since no calcium or magnesium soap is present to precipitate when the temperature is lowered. Finished liquid soap does not clog dispensing equipment.

Ordinarily, the correct amount of the chelating agent is simply added to the saponification mixture. If necessary, however, it can be added to the liquid soap after saponification. In the latter case, Versene 9 is recommended. Versene 9 has the same pH—9.3—in dilute solutions as liquid soap, hence large amounts may be added to the finished product without changing its pH.

SYNDETS

Since synthetic detergents do not form insoluble soaps, it is commonly believed that their action is independent of water hardness. This notion is erroneous—syndets react to form calcium and magnesium salts with a resulting loss of detergency; the only difference is that the salts are soluble, hence cannot be seen. In certain instances, detergents also form precipitates through reaction with iron and various other divalent metallic salts. For these reasons, chelation with Versene, Versenol, or Versene Fe-3 Specific is an important factor in syndets.

With detergents, Versene is best introduced during the manufacturing process. If this is not possible, the bead form of Versene can be added to the builder, which is then mixed with the detergent. Two and one-half times as bulky as the powdered form, the beads will not stratify when packaged.

A NEW KIND OF CHEMISTRY?

Is chelation the answer to all ion contamination difficulties? Despite its many successful applications, the answer is sometimes "no." For, remarkable as it is—in locking up metal ions to simplify processing and improve detergent products of every kind—chelation does not solve all problems in every application. But wherever metal ions do pose a problem, investigation is worthwhile. And we'll help in every way possible. To see if you can put Versene or Versenol products to profitable use, write Technical Service and Development, Dept. CA-903 A-1, THE DOW CHEMICAL COMPANY, Midland, Michigan.

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- Shampoos
- Shave products
- Soap powders
- Starch
- Steam cleaners
- Medicinal soaps
- Textile detergents
- Toiletries
- Toilet soaps and other detergent and soap products

George L. Schultz, president of Shulton, Inc., Clifton, N. J., has been instrumental in pushing firm's sales to close to $30,000,000 in 1956. A graduate chemical engineer, he has been emphasizing diversification and research activities.

shampoos...

dishwashing detergents...

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New developments in

INDUSTRIAL DETERGENTS

By John Morrisroe*
Pilot California Co.
Los Angeles

IN presenting some facts and figures and some personal opinions about developments in industrial detergents we should state that the developments comprehended are those in resources or raw materials, in product development or function, in processing improvements and in market use of products.

As a springboard, we will base our estimate of the present market status of all organic detergents upon the most recent data of the Tariff Commission for 1955. But before going into the current market status of all organic detergents, we wish to emphasize the important relationship that exists between detergents and the degree of industralization of a country as shown in Table I. It will be noted in Table I that the countries in the first group, which includes the United States, have the highest annual tonnage use of detergents and also the highest percentage of population employed in industry. In the second group, which includes Australia, Canada and others, there are fewer people engaged in manufacture and a lower per capita use of all detergents. In Group III, which includes Brazil, Colombia, and other countries, the percentage of population engaged in industry is still lower and the per capita consumption of detergents smaller.

The statistics cited above and in Table I are based on figures of the Association of American Soap and Glycerine Producers. They can be interpreted to mean that detergents in general are a luxury, that richer countries can afford more luxuries and that wealthier nations are those with a greater degree of industrialization. Such reasoning overlooks an economic principle which is different in chemical market research from that of any other market research. The principle is that chemicals are used because they do work at lower costs. In regard to detergents, the fact they do work is the principal reason for their use. If a railroad car is to be washed, it will take two to three times as many man hours of labor to get it reasonably clean with plain water as it will with trisodium phosphate or oxalic acid or any other inorganic detergent. In turn, the inorganic detergent will consume far more time and take more pounds of material than a specifically designed compound of both organic and inorganic components. Dr. Bacon of DuPont Laboratory made extensive tests along this line and came up with the interesting figure that a pound of the ordinary detergent as employed in experimental conditions gave about 450 H.P. hours of work. The average price of such a detergent is 25¢ and there is no labor or mechanical power anywhere in the world low enough in cost to compete with this. As a country industralizes, the need for performing work more efficiently continues to grow and the use of industrial detergents increases because of the consequent reduction of electrical, manual and

Table I. Relation of total detergents used to industrialization.

	% of Population Employed in Manufacturing	Detergent Sales Per Capita
GROUP I	28.3%	24.5 pounds
Belgium		
Netherlands		
Sweden		
United Kingdom		
United States		
GROUP II	22.4%	14.7 pounds
Argentina		
Australia		
Canada		
Cuba		
Denmark		
France		
Mexico		
New Zealand		
South Africa		
Switzerland		
Uruguay		
West Germany		
GROUP III	11.6%	5.4 pounds
Brazil		
Colombia		
Dominican Republic		
Eire		
India		
Italy		
Jamaica		
Japan		
Java		
Panama		
Philippine Republic		
Puerto Rico		
Venezuela		

Source: "The Dynamics of the Soap Industry," A presentation based on a talk given at Rutgers University, New Brunswick, N. J., by Roy W. Peet, Manager, Association of American Soap & Glycerine Producers, Inc. Page 13 and 14.

* Based on a paper presented before the Chemical Market Research Association of Southern California, Oct. 11, 1956.

thermal energy that can be effected by this means.

In Table II, we have listed from the recently published 1955 Report of the Tariff Commission the statistics for cyclic surface-active compounds reported on a 100 per cent organic basis. Note that the heaviest poundage is of the alkyl aryl sulfonate types, comprising some 439 million pounds in 1955. There is also a very considerable tonnage (approximately 125 million pounds) of petroleum sulfonates derived from refinery operations. Annual tonnage of surface-active agents as a whole amounts to nearly one billion pounds, with a value in the order of 241 million dollars. As will be seen later, this value is exclusive of the other components used in industrial detergents and comprises only the organic surface active materials per se.

In Table III, which includes figures on non-cyclic surface-active agent compounds from the 1955 Tariff Commission Report, it can be seen that anionic salts of sulfated fatty alcohols and esters are the largest class, having an annual production of approximately 137 million pounds. This class includes a very large amount of surface-active agents of many types derived from the fats and oils.

Roughly 75 per cent of the surface active agents, for which data are given in Tables II and III, is used in packaged household goods and 25% in industrial uses. The percentage for industrial use rises more sharply than the total as a whole on a year by year basis. In summarizing the report, the Tariff Commission states:

"The surface-active agents covered in this report include synthetic organic detergents, and wetting, dispersing, penetrating, and emulsifying agents; soaps are not included. As the data are given in terms of 100 per cent active material, they exclude all inorganic salts, water, and diluents.

"Originally developed as soap substitutes for the textile industry, surface-active agents have proved valuable in many other applications because of their varied and specific properties. Today, packaged household and industrial detergents account for about 75 per cent of the total production. The rest, used as wetting, dispersing, penetrating, and emulsifying agents, find many applications in the processing of textile and leather, in ore flotation and oil-drilling operations, and in the manufacture of paints, agricultural sprays, lubricants, cosmetics, foods, and many other products.

"In 1955, production of surface-active agents as a group totaled 1,153 million pounds, or 12.4 per cent more than the 1,026 million pounds reported for 1954. Sales in 1955 were 1,066 million pounds, valued at 241 million dollars, compared with 913 million pounds, valued at 196 million dollars, in 1954.

"In 1955, the production of anionic surface-active agents (sulfated and sulfonated cyclic and acyclic compounds, phosphorus-containing acyclic compounds, and acyclic salts of fatty acids) amounted to 905 million pounds, or approximately 78.5 per cent of the total quantity of surface-active agents produced. This quantity was 73 million pounds more than the output in 1954. Sales in 1955 totaled 852 million pounds, valued at 170 million dollars, compared with 737 million pounds, valued at 142 million dollars, in 1954. In volume of production, the principal items in the anionic group in 1955 were the following: The dodecylbenzene sulfonic acid type of surface-active agent (446 million pounds); sulfated and sulfonated alcohols and esters (137 million pounds); and sulfonated petroleum aromatic compounds (125 million pounds)."

Table II. Market status of synthetic detergents.

Chemical	Production	Sales		
		Quantity	Value	Unit Value
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total	1,153,181	1,066,108	241,404	$0.23
SURFACE-ACTIVE AGENTS, CYCLIC				
Total	763,839	705,460	148,289	.21
Esters and ethers, nonsulfonated, total	71,819	48,858	15,012	.31
Nonylphenoxy polyethoxyethanol	30,600	11,503	2,819	.24
All other	41,219	37,355	12,193	.33
Nitrogen-containing surface-active agents, nonsulfonated, total	10,083	5,969	4,272	.72
Benzyllauryldimethylammonium chloride	1,445	1,289	968	.75
All other	8,638	4,680	3,304	.71
Sulfated and sulfonated cyclic surface-active agents, total	681,937	650,633	129,005	.20
Alkyl benzenoid compounds, sulfated and sulfonated, total	449,263	442,988	107,114	.25
Dodecylbenzenesulfonic acid type	446,172	439,927	106,159	.24
All other	3,091	3,061	955	.31
Lignin derivatives, sulfonated, total	79,596	77,584	3,010	.04
Naphthalene derivatives, sulfonated, total	6,493	3,680	1,375	.37
Butylnaphthalenesulfonic acid, mono and di	1,874	1,664	353	.21
Diamylnaphthalenesulfonic acid	150	.....	.....	.....
Isopropylnaphthalenesulfonic acid, mono and di	1,070	909	633	.70
All other	3,399	1,107	389	.35
Petroleum aromatic compounds, sulfonated, total	124,548	104,722	12,317	.12
Acid-layer-type petroleum sulfonate, sodium salt	1,937	.....	.....	.....
Oil-layer-type petroleum sulfonate, sodium salt	82,750	79,382	10,168	.13
All other	39,861	25,340	2,149	.08
All other sulfated and sulfonated cyclic surface-active agents	22,037	21,659	5,189	.24

Source: United States Tariff Commission, Synthetic Organic Chemicals, United States Production and Sales, 1955, Report No. 198, Second Series. Page 51.

Table III. Market status of detergents.
(Surface active agents, cyclic)

Chemical	Production	Sales,		
		Quantity	Value	Unit Value
Grand total	1,000 pounds 1,153,181	1,000 pounds 1,066,108	1,000 dollars 241,404	Per pound $0.23
SURFACE-ACTIVE AGENTS, ACYCLIC				
Total	389,342	360,648	93,115	.26
Esters and ethers, nonfulfonated, total	101,227	95,151	24,190	.25
Diethylene glycol monolaurate	726	595	205	.34
Diethylene glycol mono-oleate	363	230	71	.31
Diethylene glycol monostearate	1,442	846	247	.39
Glycerol mono-oleate	3,720	3,408	1,156	.34
Glycerol monostearate	11,576	10,881	2,837	.26
Polyethoxyethyl coconut oil ester	214	186	44	.24
Polyethoxyethyl dilaurate	544	534	212	.40
Polyethoxyethyl dioleate	239	233	88	.38
Polyethoxyethyl monolaurate	763	589	227	.39
Polyethoxyethyl mono-oleate	1,808	1,030	391	.38
Polyethoxyethyl monostearate	2,996	2,816	1,131	.40
Polyethoxyethyl tridecyl ether	1.026	751	254	.34
1,2-Propylene glycol monolaurate	184	164	80	.49
1,2-Propylene glycol monostearate	674	640	187	.29
All other	74,952	72,248	17,060	.24
Nitrogen-containing surface-active agents, nonsulfonated, total	65,353	64,350	27,661	.43
N-(Aminoethyl)-N-(hydroxyethyl) stearamide (Stearamide of amino-ethylethanolamine)	2,204	1,878	2,015	1.07
Coconut oil amide of mono(diethan-olamine) (Diethanol lauramide)	3,185	2,130	875	.41
Coconut oil amide of bis(diethan-olamine	4,739	4,716	1,664	.36
Coconut oil amide of diethan-olamine, neither mono nor bis	2,528	2,379	975	.41
N,N-Di(2-hydroxyethyl)oleamide (Diethanol oleamide) (Diethan-olamine oleate)	931	827	330	.40
N,N-Di(2-hydroxyethyl)stearamide (Diethanol stearamide)	870	631	297	.47
Stearamide of diethylenetriamine	477	455	308	.68
All other	50,419	51,334	21,197	.41
Phosphorus-containing surface-active active agents, nonsulfonated	1,852	1,178	630	.53
Salts of fatty acids, nonsulfonated, total	23,094	22,337	2,710	.12
Coconut oil, potassium salt	53	50	24	.48
Potassium laurate	106	106	19	.18
Potassium oleate	614	424	84	.20
Potassium tallate	728	661	118	.18
Sodium oleate	958	948	176	.19
Sodium stearate	428	431	118	.27
Tallow, sodium salt	3,516	3,428	530	.15
All other	16,691	16,289	1,641	.10
Sulfated and sulfonated acyclic surface-active agents, total	197,816	177,632	37,924	.21
Acids, sulfated and sulfonated, total	3,512	2,546	783	.30
Oleic acid, sulfonated((Sulfonated red oil)	2,520	1,635	562	.34
All other	992	911	221	.24

(Table continued on following page)

In actual use, these organic detergents are combined with tripolyphosphate, sulfate, sodium silicate, carboxymethyl cellulose, and in solutions with ethyl alcohol, hexylene glycol, and with other salts. The net result is that the products as used industrially are four to eight times greater in poundage than the organic industrial detergents which they include.

In Table IV appears a summary of cleaning compositions as they were actually handled in 1954 and 1947. The figures are those of the Census of Manufacturers for the Cleaning and Polishing Preparations Industry. Table IV records the substantial change in volume that occurred between 1947 and 1954. For instance, total poundage has increased more than twofold and total dollar volume from about 400 million to about one billion. This tabulation in Table IV is for cleaning compositions as a whole and therefore includes products made by other than compounders. It specifically includes those made by the soap companies themselves. According to the Bureau of the Census, 44 per cent of the total was made by the compounding industry, which is industrially separate from the soap industry.

The Cleaning and Polishing Preparations Industry, which is the way it is classified by the Department of Commerce, is spread across the country and consists of a few large producers and a host of smaller ones.

In Table V appears a breakdown of the industry by sections in the United States, including number of employees, value of products and poundage of materials. Because of the rules prohibiting disclosure of individual reports, the Census of Manufacturers unfortunately lumps together West and South as one category. But even this illustrates the extreme variety present in the industrial detergent business.

Turning now to the recent course of developments in the vari-

Table III. (Continued) Market status of detergents.

(Surface active agents, cyclic)

Chemical	Production	Sales		
		Quantity	Value	Unit Value
SURFACE-ACTIVE AGENTS, ACYCLIC—Continued	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Alcohols and esters, sulfated and sulfonated, total	136,970	134,309	29,018	.21
Lauryl sulfate, sodium salt	13,598	12,931	4,777	.37
Lauryl sulfate, triethanolamine salt	4,035	4,194	1,074	.26
Isopropyl sulfo-oleate	870	753	373	.50
n-Propyl sulfo-oleate	1,510	1,349	303	.22
All other	116,957	115,082	22,491	.19
Nitrogen-containing surface-active agents, sulfated and sulfonated, total	4,161	3,349	1,536	.46
Coconut oil amide of monoeth-anolamine, sulfate, potassium salt	113	111	86	.77
Coconut oil amide of monoeth-anolamine, sulfated, sodium salt	221	205	174	.85
N-Methyloleoyltaurine, sodium salt	2,001	1,275	591	.46
All other	1,826	1,758	685	.39
Oils, fats and waxes, sulfated and sulfonated, total	53,173	37,428	6,587	.18
Animal fats and oils, sulfated and sulfonated:				
Neat's-foot oil, sulfonated	1,830	1,694	233	.14
Tallow, sulfonated	10,850	8,348	1,148	.14
Fish and marine-animal oils, sulfated and sulfonated:				
Cod oil, sulfonated	4,199	3,345	478	.14
Sperm oil, sulfonated	6,339	2,812	580	.21
Tall oil, sulfonated	439	423	119	.28
Vegetable oils, sulfated and sulfonated:				
Castor oil, sulfonated	9,563	7,114	1,304	.18
Corn oil, sulfonated	210			
Mustard seed oil, sulfonated	136			
Peanut oil, sulfonated	1,897	1,743	494	.28
Rice-bran oil, sulfonated	722	376	86	.23
Soybean oil, sulfonated	827	360	113	.31
All other oils, fats, and waxes, sulfated and sulfonated	16,161	11,213	2,032	.18

Source: United States Tariff Commission, Synthetic Organic Chemicals, United States Production and Sales, 1955, Report No. 198, Second Series. Pages 51 and 52.

ous fields of raw materials, products, processes, and uses, we will take up first a few examples in the field of raw materials.

Raw Material Changes

FOR a long time there has been a great desire to make either aliphatic or alkyl aromatic surface active agents from straight chain olefins rather than from branch chain olefins. As was seen in the statistical data, almost half of the organic raw material used today is from an alkyl benzene or alkyl phenol base. The side chain on this material is made from the polymerization of propylene. As a result it has a branched structure which gives it good solvent properties but is not crystalline enough for the highest degree of detergency and the greatest foam stability. If the side chain were straight, improvements in the last two properties would be possible. One major oil company has an extraction process which would remove straight chain olefins and straight chain paraffins from refinery streams where they occur in small amounts. These are presently available for research purposes and offer hope of making an improved product.

Another source of such straight chain olefins is from the operation of the Fischer-Tropsch process. This is far more important in Europe than it is here but olefins from such a source could be made available in large quantities if the process were carried through in the United States on natural gas and on coal.

Such straight chain olefins would be available for conversion to alcohols and would fit quite naturally into the Oxo process which has been operated in this country by several companies using branch chain feed stocks, such as diisobutylene and tetrapolypropylene. The alcohols formed from the branching materials are being marketed now and have found use in liquid detergents but will not be serious competitors to lauryl alcohol until they are straight chain.

Higher fatty alcohols derived from tallow, vegetable oil, and similar natural sources are presently used. They are employed as detergency improvers, usually in combination with other active ingredients.

Also as a part of the hydrocarbon portion of the molecule, cracked naphtha can be employed where polymers have been used so far. Just as in the case of straight chain olefins, the cracked naphtha can itself be used for alkylation or for conversion into alcohol.

At one time it was widely assumed that benzenoid and other aromatic compounds would be impossible to use in synthetic detergents due to their assumed ability to dissolve fats, and thereby to penetrate the skin. However, toluene and xylene sulfonate are being

(*Turn to Page* 135)

Table IV. Quantity and value of cleaning preparations by all producers in the United States: 1954 and 1947.

(Includes quantity and value of these products reported both by establishments classified in the Cleaning and Polishing Preparations Industry, and by those establishments making these items as "secondary" products in other industries).

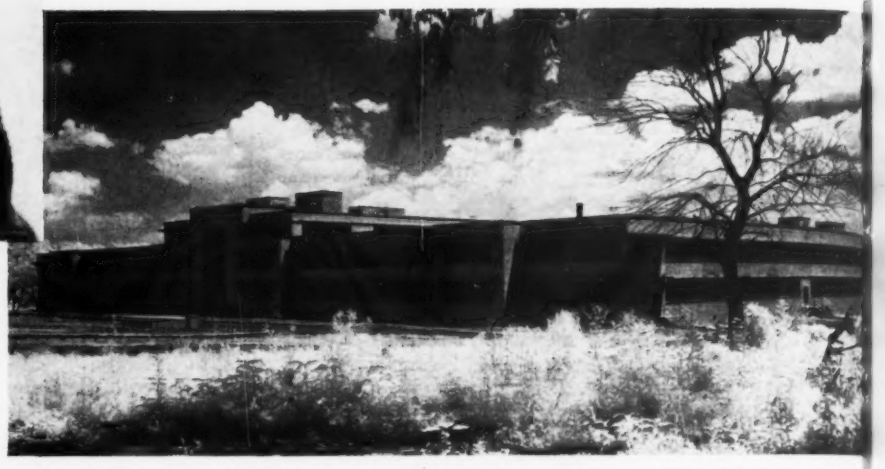
Product Code	Product	Unit of quantity	Total shipments including interplant transfers			
			1954		1947	
			Quantity	Value ($1,000)	Quantity	Value ($1,000)
2842—	Cleaning and polishing preparations, total	.....	4,733	1,000,200		350,651
28421	Synthetic organic detergents, packaged ..	.....		504,142		93,242
	Synthetic organic detergents (not in combination with soap but including combinations with inorganic alkaline detergents):					
2842111	Liquid	Thousand gallons	8,766	35,670	954	1,123
2842113	Bars	Thousand pounds	3,392	2,082)		
2842115	Granulated, powdered, sprayed, chips, and flakes	.....do	1,936,805	398,964)		
2842117	Washing powders	.....do	5,021	1,026)	264,928	91,349
	Synthetic organic detergents in combination with soap:					
2842131	Liquid	Thousand gallons	159	194	397	770
2842133	Bars	Thousand pounds		)		
2842135	Granulated, powdered, sprayed, chips and flakes	.....do	193,599	32,558)		
2842151	Scouring cleaners containing abrasives made with synthetic organic detergents	.....do	289,075	31,231		
2842100	Synthetic organic detergents, packaged, not specified by kind	.....		2,417		
28422	Synthetic organic detergents, bulk	.....		92,769		41,526
	Synthetic organic detergents (not in combination with soap but including combinations with inorganic alkaline detergents):					
2842211	Liquid	Thousand gallons	5,704	9,183	4,825	4,063
2842213	Bars	Thousand pounds	5,828	907)		
2842215	Granulated, powdered, sprayed, chips and flakes	.....do	58,744	7,623)	67,949	7,660
2842217	Washing powders	.....do	23,304	3,047)		
	Synthetic orgnic detergents in combination with soap:					
2842231	Liquid	Thousand gallons	1,784	3,433	1,021	1,285
2842233	Bars	Thousand pounds	708	105)		
2842235	Granulated, powdered, sprayed, chips and flakes	.....do	63,132	10,523)	17,296	1,139
2842237	Paste or jelly	.....do	13,221	2,012)		
	Scouring cleansers, containing abrasives made with -					
2842251	Synthetic organic detergents	.....do	5,910	522		
2842255	Others (including combination soap and S.O.D.)	.....do	652	118		
2842271	Bulk surface active agents, other than sulfonated oils and fats, primarily for detergent purpose	.....do		51,613		27,379
2842200	Synthetic organic detergents, bulk, not specified by kind	.....		3,683		
28423	Specialty detergents	.....		90,980		43,697
28425	Alkaline detergents (mixture containing sodium and/or phosphatic compounds)	.....		73,660		36,488

Source; 1954 Census of Manufacturers, U.S. Department of Commerce, Bureau of Census. Page 3 (Series: MC-28-4.2).

The house that Bill Schultz built

THE STORY OF

The late William Lightfoot Schultz, founder, and president until his death in Nov., 1950.



A beautiful plant in a beautiful location best describes Shulton's home, an industrial show place, located on a 33-acre landscaped site in Clifton, N. J. Plant was completed in 1947.

FOUNDED in the depth of the depression on courage, confidence and a dummy soap package, Shulton, Inc., Clifton, N. J., sold $29,500,000 worth of merchandize in 1956, 23 years after its inception. The firm was founded in 1933 by William Lightfoot Schultz, soap maker, salesman, and designer, a man of exceptional strength of character and vision. Shulton was actually incorporated in 1934 but its roots reach back much further into Bill Schultz's past.

Mr. Schultz began his business life in the interior decorating field. Design, form, and beauty of every kind were as integral to his personality as salesmanship and drive. In 1910 he moved from Philadelphia to New York and became a soap manufacturer. He organized Lightfoot Schultz Co. and assumed its presidency. His knowledge of artwork and design served well in the packaging of his products and his flair for merchandizing in their distribution. Bill Schultz, the soaper, continued to grow and prosper for twenty years.

Perfume laboratory facilties at Shulton plant under the direction of Dr. Oliver Marton, extreme right in photograph, create and control all the fragrances for Shulton products.

In 1930 he decided that expansion and diversification of his operations were in order and he turned to the fine chemicals field. This venture involved him in serious financial loss at a time when money was extremely scarce. Lightfoot Schultz was still doing well in the soap business but the company had to borrow money to keep going. Bill Schultz, most independent of men, was forced to relinquish control of the business to the American Safety Razor Co. In 1932 he resigned and severed all relationship with Lightfoot Schultz, still a prominent American soap producer. Schultz was then 57 years of age and in debt. With a wife and two children at the very bottom of the

Shulton
INCORPORATED

Filling and packaging department at Shulton plant in Clifton is as modern as the rest of the building. The latest equipment and techniques are employed.

depression he was faced with a grave decision: one of the major soap companies offered him a position as sales manager. Bill Schultz decided that he had been his own boss for too many years to enter anyone's employ. He turned the offer down. And this is where the story of Shulton begins.

Shulton Started

OFFICE space was the primary need of the new enterprise. Schultz went to the manager of the Bowery Savings Bank Building, half empty at the time. He said he was unable to pay rent for at least six months, but if sucessful, would pay retro-actively and become a regular tenant. On these terms he got a suite of offices. His former secretary, Theresa Tinker was so confident of his success that she also resigned from Lightfoot Schultz to go to work for him. He found a freelance artist who translated rough soap package sketches into a finished presentation, also willing to take a gamble.

Without a product, merely on the strength of his reputation and on the basis of the artist's sketches he obtained orders for soap from department store buyers. Having secured enough orders, Bill Schultz approached soap makers and box makers. John T. Stanley Co. agreed to supply the soap and Carl Voss to make the boxes on a 90 days or longer credit basis.

In 1933 Bill Schultz was the entire Shulton sales force. Sales in the first year totaled $165,000, a considerable achievement considering the times and circumstances.

Excellent frescoes by Louis Bouche and furnishings designed by Szoeke combine to make the lobby a room of impressive loveliness. Murals represent contributions made by different cultures and countries to industries serving woman's beauty.

Creates Old Spice

AFTER a few years of steady progress Shulton passed a major milestone in 1937: William Schultz created the Early American Old Spice line of soap and toiletries, destined to remain the firm's mainstay right to this day.

Again Bill Schultz had conjured a family of products from a packaging idea, this time taken from the American past, actually from an old Vermont carpet. Once the packages were designed for the new line of women's toiletries and the name decided upon, the search was on for the right kind of nostalgic perfume. Guided by his memories of an old spice jar in his boyhood home, he and his perfume supplier came up with a properly old-fashioned fragrance and Mr. Schultz once more made the rounds of the nation's department stores, selling them on a package, an idea, and a fragrance, on atmosphere and quality in fact, to retail at a reasonable price. He returned to his desk with $50,000 in orders from 28 deparment stores.

Shulton, Inc., which had not been getting wealthy on its private label lines now faced a rich future —on paper. Once again Bill Schultz took his orders to his suppliers and met with their full support.

Early American Old Spice for women was launched in Septem-

NEW: Contrast packaging for the three popular Shulton "Old Spice" products shown on this page with the packaging for the items as they appeared when they were first introduced. Sections of packaging that are dark are now printed in red.

ber 1937 and grossed $77,000 during the first four months of its existence. The low price level, $1 for most items, was only partly responsible for the success. Packages, authentic adaptations of early American designs, ran parallel with a general revival of Americana and lent themselves to home decoration, especially since the firm name appeared only at the bottom of the container.

Move to Hoboken

WITH the resounding success of Old Spice, the company outgrew its assembly plant located in a Manhattan loft and moved to larger quarters in Hoboken, N. J. In September, 1938, Shulton introduced Old Spice for men, with the key-note set by a pottery mug full of shaving soap showing a reproduction of the trading ship, "Grand Turk." Today the line includes five ways to shave: soap, brushless, lather, stick, and aerosol, in addition to shower soap, shampoo, etc. Every package features a ship replica. Many items still sell for the $1.00 price at which they were introduced.

By 1939 the Old Spice total had soared to $3,100,000 with the men's line accounting for 22 per cent of the company's gross. In 1940 another feminine line called Friendship's Garden was introduced and in 1941 Desert Flower appeared on the Shulton scene, but the men's line has remained in the lead.

George Schultz Enters Firm

UP to this point the rise of Shulton has been the story of William Lightfoot Schultz. It now becomes the story of two men. In 1940 Bill's only son, George L. Schultz, graduated from Princeton and became full-time manager of the Hoboken plant. George Schultz was well prepared for the job, not only by graduating as a chemical engineer, but equally by working his way through Princeton selling Shulton products. His advent really started the build up of a manufacturing organization. In 1942 he became vice-president in charge of accounting, legal aspects, and development of manufacturing and shipping.

Bill Schultz had long cherished a vision of a model plant. With war shortages subsiding in 1946, the two men started plans and construction of Shulton's present home, an industrial show place completed in 1947 on a 33-acre landscaped site in Clifton, N. J. Speaking in the vernacular of ancient Greece, the Clifton plant is a temple of beauty, efficiency, and industrial progress. The proportions of the building are beautiful. Excellent frescoes by Louis Bouche and furnishings designed by Szoeke combine to make the lobby a room of impressive loveliness. Completed by Bouche within a period of two and a half years, the murals represent contributions by different cultures and countries to the industries serving woman's beauty.

Self-Contained Operation

WHEN Shulton moved into its new home, it started in earnest on the road towards integration and diversification, a road which it is still traveling today. The plant at Clifton houses one of the most self-contained operations in the industry, equipped to produce by most efficient means nearly all components of the firm's products and their packaging.

Shulton makes all of its own boxes, except folding cartons. It is tooled to turn out square, rectangular, round and cylindrical boxes at a rate exactly synchronized with the needs of the production line. No problem of box storage or timing of shipments. Boxes are made on an upper floor and conveyed through power chutes to the packaging lines where women operators fill them with products.

The plastic division turns out plastic containers for shave sticks and a number of other items, plastic caps and an attractive lacy basket of polyethylene for several of the Desert Flower packages. This division also was responsible for Shulton's adoption of a polyethylene stopper in place of cork and ground glass, quite a pioneering step in 1947. Squeeze bottles and a

OLD: Shave mug, originally introduced in 1938, came packed in a carton of ecru color. Similarly, the bath soap (center) sans shower cord, of course. Design for lather and brushless shave cream tube and carton has been simplified, cleaned up in design.

number of other plastic containers are bought from Plax, Inc. All the molds used by the plastics division are also made in Shulton work shops.

Shulton today manufactures all items included in its toiletries lines except toilet soap, for which, however, it supplies fragrance and dies. All fragrances are developed by the firm's own top flight perfumers and manufactured by Shulton.

Pressure Packaging

THE plant at Clifton does its own pressure packaging. One of the first pressure fillers in the industry was installed there by Oil Equipment Laboratories, Inc. Aerosol products include "Smooth Shave," and spray colognes in four and a half ounce plastic coated Wheaton glass bottles with valves by Risdon. Perfume concentrates come pressure packed in quarter ounce purse sized aerosol containers by Valve Corp. of America.

Fine Chemicals Division

SHULTON became a basic producer of aromatics and intermediates when it established a Fine Chemicals Division five years ago. Conceived originally as a step to diversify operations and to assure a reliable source of the basic materials for Shulton fragrances and toiletries, the division was greatly enlarged in 1955 by the acquisition of A. Maschmeijer Jr. Co., Newark, N. J. Today approximately five per cent of the division's output is destined for captive use. Exclusive of intra-company transactions, Fine Chemicals now accounts for almost 10 per cent of the company's total sales.

In addition to aromatics for use in perfume, toilet goods, and soap, the division makes flavor chemicals and has lately embarked on a new venture into the insecticide field. Shulton scientists found an industrially workable synthesis for "Sesoxane," a pyrethrum synergist derived from heliotropine. For

Products in Shulton's "Old Spice" men's line presently include shampoo (left) aerosol shave cream, which is loaded on firm's own filling line, and "pre-electric shave lotion" for men who have switched from using razors. Plastic squeeze bottles are also used.

a basic producer of heliotropine this is a most logical way of product diversification. Pilot plant quantities of "Sesoxane" are already available for trade distribution.

Pharmaceuticals Division

A FURTHER step in diversification was taken by Shulton in 1956 with the setting up of the Pharmaceutical Division and the introduction to the public of "Thylox" medicated soap, cream, and shampoo. The first two products had previously been marketed as ethical drugs exclusively. They have now been reformulated and repackaged for over-the-counter distribution and the "Thylox" principle incorporated in a shampoo, said to be the first liquid medicated shampoo available without a doctor's prescription. To supplement these three "Thylox" products, a fourth is currently being developed and expected to be on the market before the end of the year.

In addition to manufacturing and research facilities for its widely diversified products the Clifton plant incorporates a modern cafeteria which supplies meals at cost price to all employees, from operators to management. Manufacture of established products is highly automated. But the firm's policy is to mechanize only as volume demands, in other words "try it out before going overboard." And certain operations of the toiletries division are seasonal or by their very nature unsuited to complete automation.

Expansion of manufacturing facilities in Clifton and of sales and distribution facilities in Chicago are currently under way. Shulton's main sales office is located in Rockefeller Center, New York. This incorporates a suite of beautifully decorated showrooms. The firm has a large sales force, does only a small percentage of its business through jobbers.

Shulton has always been publicity conscious, started its now renowned Father's Day promotion in 1939. Today the firm sponsors top hits on television such as Edward Murrow's "See It Now," Victor Borge's "Comedy in Music," and "Cinderella" by Rodger and Hammerstein. Shulton's newspaper and magazine advertising program in 1956 included six separate campaigns in 116 papers and 175 insertions in prestige and popular magazines.

Shulton's deluxe gift package for men contains shower soap, aerosol shave cream, after shave lotion and talc, cologne and body talcum. Seven items come packaged in attractive red box, the cover of which features the traditional Shulton sailing ship.

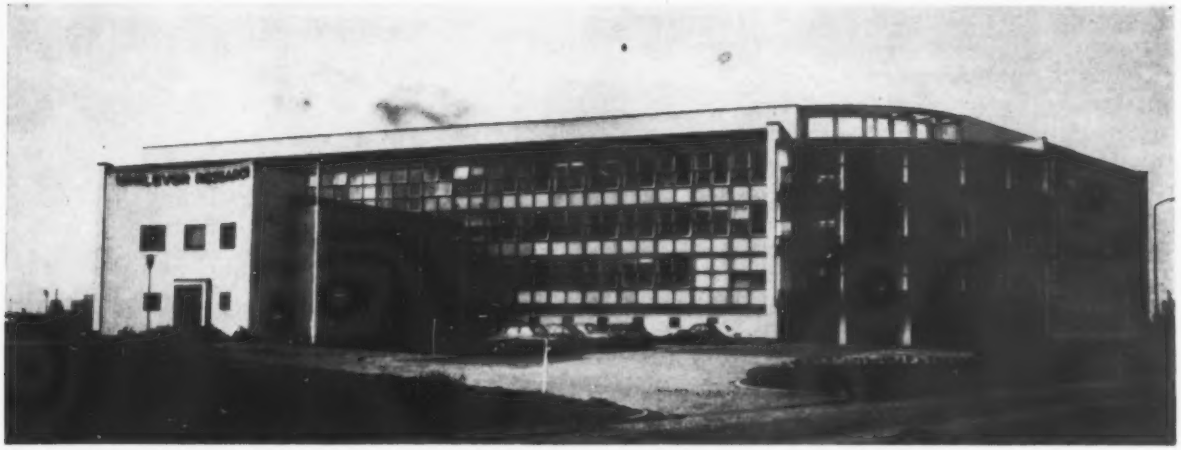
International Activities

EARLY in 1956 Shulton established an International Division. The firm had been doing a considerable export business even back in the Hoboken days. Today its products may be bought in 52 countries. It has subsidiaries in Canada, Mexico, Cuba, Venezuela, Holland and Great Britain. All products sold in Canada are manufactured in Shulton's plant in Toronto and a plant at Leiden, Holland is to go into production this month to supply the Benelux and other European markets. Slated for construction in 1957 is a factory in Havana, Cuba which will be financed entirely by the Cuban subsidiary.

A limited issue of common stock was offered to the public by Shulton for the first time in 1956. Consolidated net sales in 1956 were the highest in the 23-year history of the company and 17 per cent ahead of the previous year, totalling $29,257,961. Domestic toiletries still account for the largest part of this volume, with the men's line doing three quarters of the business.

How much, of all this spectacular development was Bill Schultz able to witness and enjoy?

(*Turn to Page* 255)



Front view of newly opened Unilever research laboratory in Vlaardingen, Holland.

Detergent Research Abroad

Knowledge, experience and latest equipment are combined with the "right men" to make use of them at new Unilever laboratory in Holland. Fundamental research emphasized.

By F. V. Wells
Editor, SOAP, PERFUMERY & COSMETICS
London

UNILEVER RESEARCH has made spectacular advances in Europe since the war. The latest and in some ways most important development took place towards the end of last year, with the opening in Holland of the new Unilever research laboratory at Vlaardingen. The official inauguration ceremony was undertaken by no less a personage than the Dutch Prime Minister, Dr. W. Drees. He said, on this occasion, that such research was of inestimable value not only to Unilever but to the people of the world generally, because it promoted technical improvements, created new and better products, tended to stabilize prices —and, indirectly, expanded the prosperity and well being of whole nations of consumers.

A memorable address was delivered at the opening ceremony by F. J. Tempel, chairman of Unilever N.V., who announced the establishment of sponsored chemistry scholarships in Dutch universities, for which Unilever had decided to make available the sum of Fl. 500,-000 (approximately $150,000.)

Close-up of main entrance of new Unilever research laboratory at Vlaardingen.

These scholarships are to be awarded annually to students from Dutch universities and schools who achieve the best results in chemistry. In the past, Mr. Tempel added, industry had been dependent on research by universities and individual inventors, but in this century we had seen the rise of systematic research undertaken by industry itself and aimed directly at developing its production programs. This research, he said, had a dual purpose—to improve existing products and to find completely new ones. Experience had shown that revolutionary changes could be expected only from fundamental scientific research, therefore industry must also undertake this.

For the purpose of this survey, we conveniently by-pass the important research units organized by Lever Brothers Co. of the U.S.A

Here we are concerned solely with European activities. Most of the concentrated scientific research undertaken by Unilever in Europe has been undertaken since World War II. Of course, there have always been works laboratories within the organization, but they were concerned mainly with factory control methods and empirical developments. The first building specifically designed and used for scientific research was completed in U.K. headquarters of the Unilever organization. Relatively few, indeed, of the visitors who are normally conducted each year around the various plant units at Port Sunlight are admitted to this holy-of-holies. (The same observation applies to other research establishments at Colworth House and Isleworth. Lever enforces an unusually strict security rule in this respect. It is only by means of chance conversations, personal deductions and the few details that they allow to emerge in print from time to time that one is able to gain any clear idea of the main lines of research on which they are engaged.)

The Port Sunlight laboratories have always, we are told, been occupied mainly with research in the field of soaps, synthetic detergents and their precursors; oils and fats, etc. They are well equipped for the most fundamental investigations, with their excellent library and science abstract resources, and the latest tools of the craft: ultra-violet and infra-red spectrometers and chromatographic equipment, including V.P.C. and, of course, the increasingly familiar electron microscope. One of their major tasks has always involved research into colloidal solutions and the examination and assessment of surface phenomena generally, in order to arrive at a better understanding of the factors influencing the efficiency of washing materials.

In the period following upon World War II there was a steadily increasing desire for more and deeper research. Unilever was primarily concerned with the problems related on the one hand to soap and synthetic detergents and on the other to the development and improvement of edible fat products, of which margarine is the most important. In addition it was found necessary to perform research into foods in general and into toilet preparations.

Rubber gloves provide protection against radio-activity in new Unilever laboratory, which employs radioactive isotopes in biochemical, analytical and physical research.

Cambridge and London

IN order to meet these needs the following projects were carried out: the laboratory at Port Sunlight was greatly expanded; Colworth House, an old country manor with extensive grounds near Cambridge was converted into a laboratory for those foods which do not contain a preponderance of fat: meat, ice cream, soups and canned foods, as well as for agriculture and horticulture, with experimental farms for research; in the Pears factory in London a laboratory was equipped for research in the field of toilet preparations; at Edgewater, N. J., across the Hudson River from New York a large laboratory was built in which all research for specifically American requirements was concentrated. In December, 1950, the board of Unilever decided to established a new laboratory in Holland for research into edible fats, to replace the somewhat primitive laboratory at Zwijndrecht, which had hitherto carried out investigations in to the chemistry and technology of soaps and detergents and biological aspects of edible oils and fats.

The toilet preparations research laboratory, formerly housed at Port Sunlight and subsequently removed to the factory of A. & F. Pears Ltd.—a Unilever unit—at Isleworth, London, should by now have completed a very valuable body of work for the organization, judging by the high calibre of some of the people who have worked in it. Among other projects, it has paid special attention to problems of wetting, emulsification and rheology, particularly in so far as they affect the consistency, stability and performance of emulsified toilet preparations.

Vlaardingen

THE new Dutch laboratory at Vlaardingen, the latest spire in the growing structure of Unilever's European research program, has been designed to undertake research in the widest sense of the word in the field of oils and fats; one which cannot be rigidly defined either

geographically or scientifically. The results of its work will naturally be made available to the entire organization and it will co-operate with other existing Unilever laboratories and factories.

The site on which it is built measures some 2.5 hectares and adjoins Lever's Zeep Maatschappij N.V. The first pile was driven on April 1 (surely a good omen, in this case), 1953. The architects were the late A.v.d. Steur and W. Herman de Groot, neither of whom regrettably lived to see the full realization of their plans. The builders were Bataafsche Aanneming Maatschappij. During the course of erection, it was decided to add another wing so as to provide accommodation for chemists devoting themselves to the further development and improvement of synthetic detergents, especially to solve specifically Continental problems. A working group from Mannheim was transferred to this new wing. Also the microbiological department, space for which had been hitherto provided on the premises of Van den Bergh's en Jurgens' Fabrieken N.V., at the Nassaukade, Rotterdam, moved into the Vlaardingen laboratory.

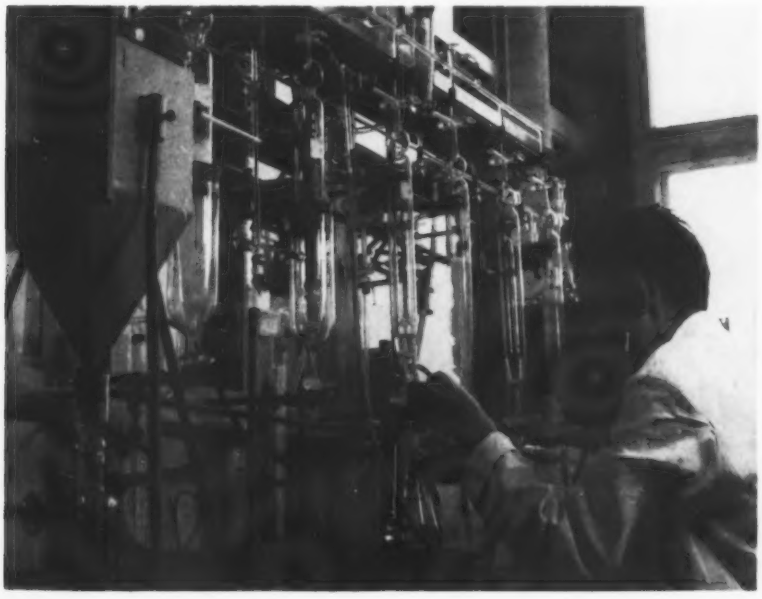
The core of the new research unit is a well-equipped organo-synthetic department which enables all kinds of substances to be synthesized in the interests of the work. Particular attention is being paid to physical chemistry, especially in so far as it relates to and interprets the phenomena of interfaces between oil, water and air—the characteristics of which are so vital to margarine and other emulsions and foams, but of which little is known as yet. Apparatus is installed for investigating the plastic, elastic and other rheological properties of margarine and fats. In order to widen the knowledge of hydrogenation, the conversion of oil into fats, catalysis and catalysts are examined and developed with the aid of the very latest physical methods. These physical methods are being applied in chemistry at an ever-increasing rate. For radiological analysis, up-to-date equipment is available; for research in the field of absorption of ultra-violet and infra-red light there are spectrophotometers. The entire technique of spectrophotometry, in its infancy until the 'forties, has made rapid strides, making possible deeper penetration into the mysteries of oil chemistry, thanks to the greater possibility of differentiation with regard to the components.

Parallel with this, interest in the physiological part played by the fats in the living organism has been intensified. Fats are no longer looked upon merely as a source of calories; it is fully realized that man and beast will react differently to different fats. Physiologists throughout the world are now delving into this problem on which the biological department of this new laboratory is also actively engaged. This department is equipped with cages of an entirely new type for conducting tests on animals in accordance with the latest principles.

All this advanced scientific work would be impossible if chemical analysis had not been widened by a vast number of much improved pieces of equipment. It is appropriate to mention here the spectacular development of chromatography as an analytical method of separation, based upon differences in physical behavior of the substances to be analyzed in relation to known systems. A remarkable case of parallelism has arisen between the analysis of volatile oils and that of fatty acids and there are undreamt of possibilities for applying the new methods. It is scarcely surprising that in this laboratory so much attention is devoted to chromatography in all its forms. Now that radio-active isotopes are being increasingly used in biochemical, analytical and physical research, a radio-chemical department has been provided for these methods, thus adding another new weapon to the scientific arsenal.

Since the purpose of an industrial research institute such as this is after all to achieve the practical realization of what is worked out in the laboratory, it goes without saying that it is provided with a technical development department. In this pilot plant the right conditions for such a practical realization can be discovered for only in rare instances will it be possible to make the big jump into practice in one go, skipping one or more intermediary phases. Considerable attention has therefore been given to this aspect. The

New Unilever laboratory features latest scientific apparatus and equipment.



equipment installed includes two refining units for semi-technical quantities of oil; there are facilities for making catalysts and for hydrogenating oils, there is also a complete installation for the manufacture of margarine in quantities of ca. 50 kg. per hour. In addition, space is available for the development of new projects.

The laboratory consists of two main sections, having the following dimensions:

(1) Length 70 m., width 14 m., height to top floor 14 m., total height 19 m.;

(2) Length 24 m., other measurements the same as (1)

The first laboratory is situated in front of the administrative wing, in which the library and the conference room are also accommodated. Below the administrative wing are installations for central heating and air-conditioning, centrifugal pumps, etc. In between the first and the second laboratory are situated the typing offices, the auditorium, the drawing office, the canteen and other offices. Both laboratories occupy a basement and three floors. In the basement of the first laboratory are situated the stores, glass blowing departments, the workshops and the cloakrooms. In the basement of the second laboratory is the biological department. On all floors there are studies, weighing rooms, sluicing rooms and toilets.

The total floor surface of the two laboratories is 7,400 sq. meters, of which the laboratories themselves occupy about 38 per cent, the corridors and staircases 15 per cent, studies 8.5 per cent and stores 5.6 per cent and the workshops, cloakrooms and the canteen the rest.

The pilot plant comprises a central hall with offices, workshops and canteen on one side. On the other side there are platforms with removable floor plates. There is also an experimental spraying tower in which solutions can be sprayed into a dry product.

The latest laboratory equipment at the new Unilever laboratory in Vlaardingen features this new type microscope.

Plan of Action

THE opening of the laboratory at Vlaardingen marks a further transition from empiric knowledge to fundamental research. Much good has, of course, already come from empiric, trial-and-error methods: in fact, the whole oils, fats, soap, detergent and edible fats industries are based on them. It is now realized, however, that further progress necessitates a more precisely defined and, in short, a more fundamentally scientific approach.

Here, in this new unit at Vlaardingen, one finds in concentrated form experience, knowledge and the latest scientific apparatus and equipment. And, still more important, the right men to make use of them. Specialization goes hand-in-hand with team spirit and team work, encouraged by the fact that the academic staff are given every opportunity to concentrate quietly on the working out of their problems. The general aim, the future plan of action, involves maximum and enthusiastic interchange of data and experience between the different members of the staff and their co-workers. They have every opportunity for success in these excellently equipped laboratories; and there is every indication that they will achieve it in full measure.

—★—

DDT Against Snakes

Successful control of snakes in buildings through the use of 10 per cent DDT tracking powder has been reported from the midwest, according to a recent release from the National Pest Control Association. However, the control of snakes by chemicals should be used only as a last resort, NPCA stresses. Snakes have their place in nature and can usually be controlled by less drastic method of a preventive nature. Moreover the tracking powder may be hazardous to pets and children.

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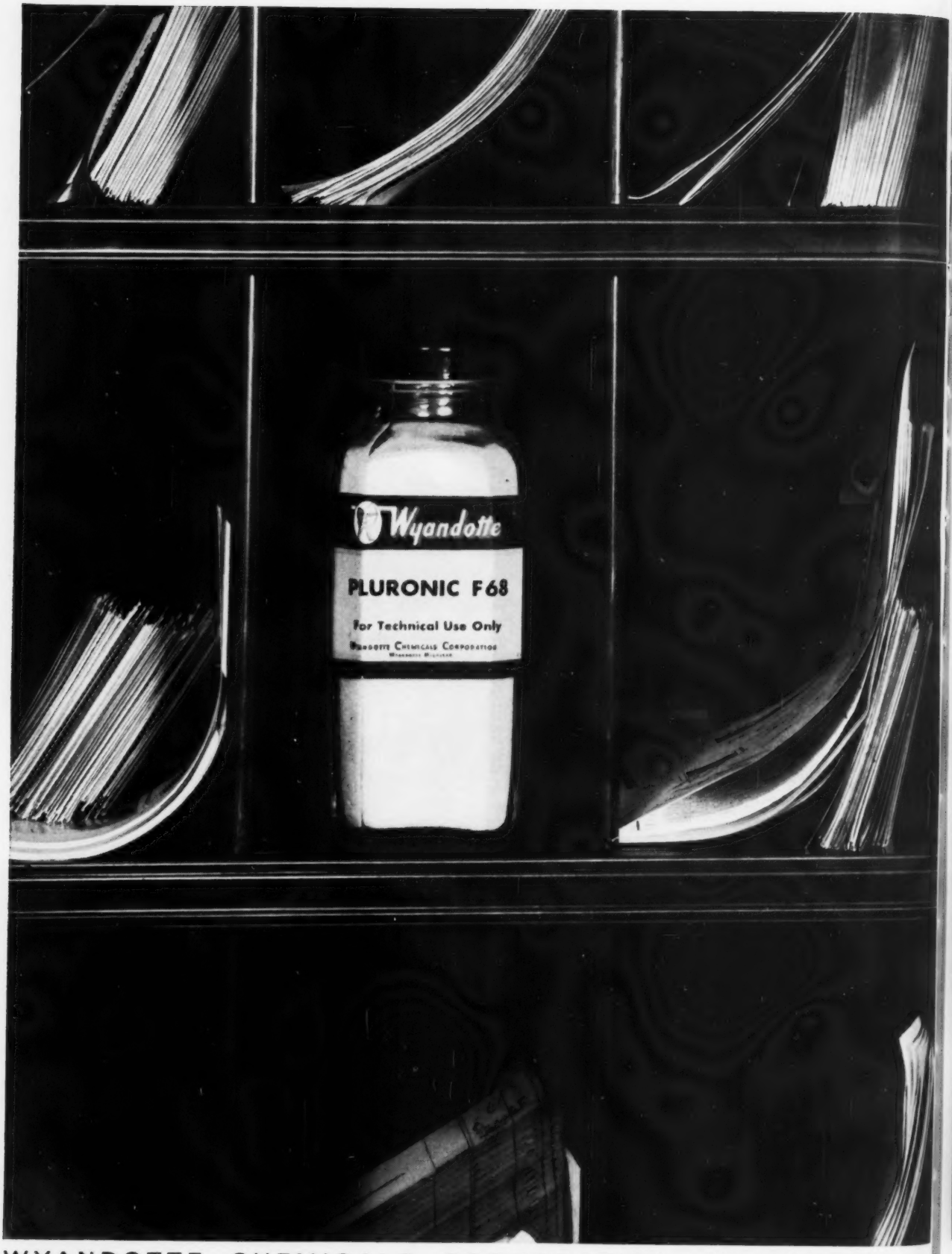

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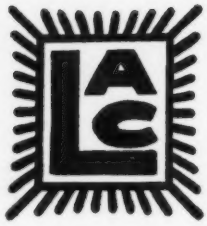

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Chemical Specialties

Announcement of Diethyltoluamide, a new and improved insect repellent developed by the U. S. Department of Agriculture, has stimulated the interest of a number of firms in marketing finished repellents based on it. Man in photo is applying "Off!", a new repellent of S. C. Johnson & Son, Inc., Racine. Product is packaged as aerosol and liquid. *Article on repellent begins on page 113.*

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Asphalt Tile Finish* — Renews and refinishes asphalt, rubber, linoleum and mastic floors. Seals and finishes new or old floors with one coat.

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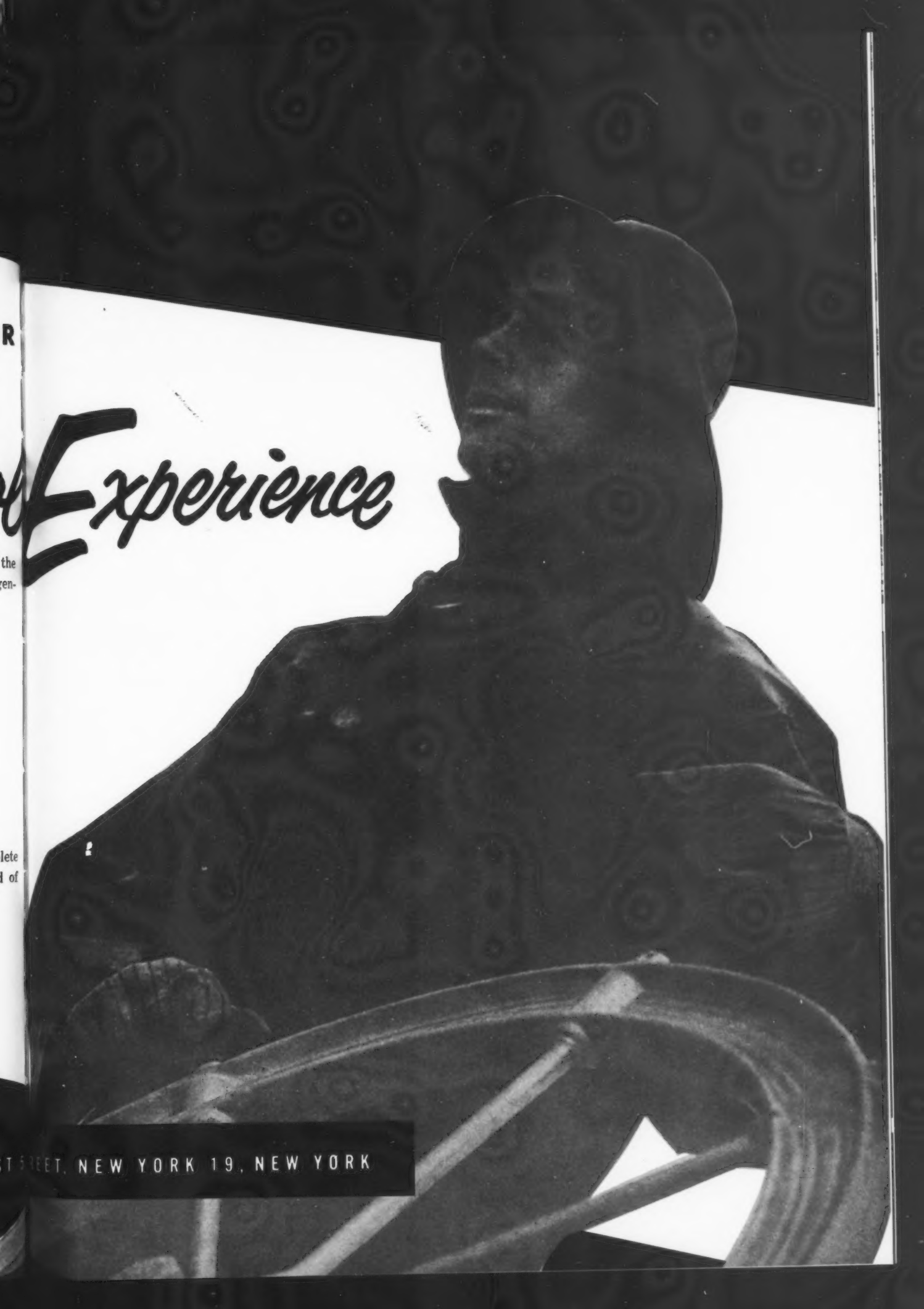
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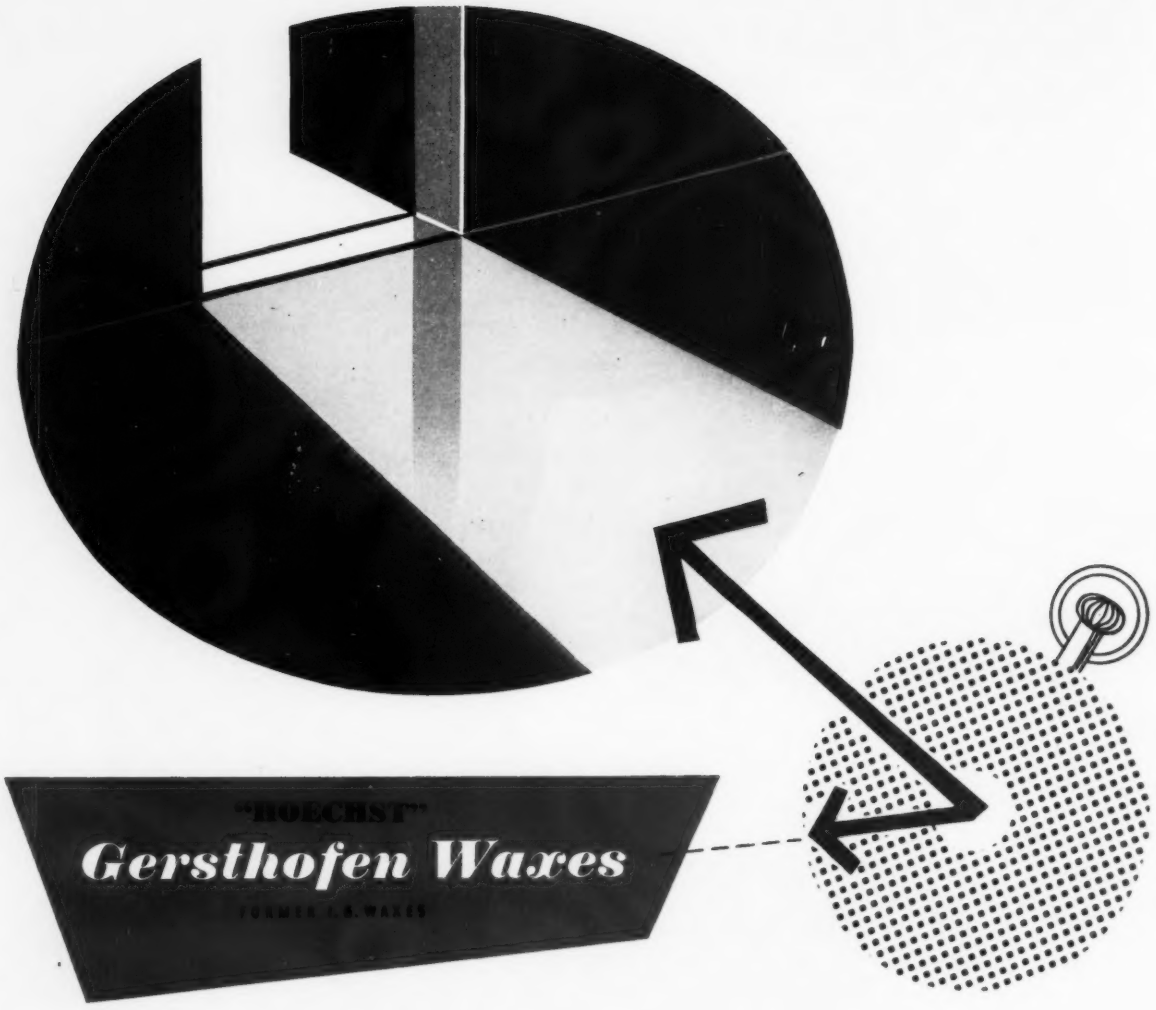

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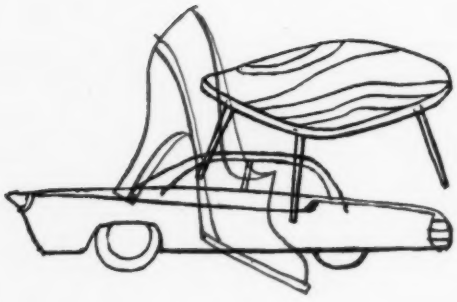

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WAX FACTS

NEWS OF INTEREST TO WAX USERS—
DEVELOPMENTS IN THE FIELD OF SYNTHETICS

Special Issue—S/57-5

The Case for Waxes

By I. Y. STRAUS

There is plenty of discussion going on at different levels of the polish manufacturing industry about the relative merits of floor waxes and resinous floor finishes. New polymerization techniques developed in recent years have produced polymer emulsions which, if formulated right, yield floor finishes having some excellent and tempting features. There can be no doubt that, as time goes on, these products will be made in ever improving quality. Thus we are sure that they have a permanent place in the overall production picture of floor treatment materials. Will this cause the so-called high wax formulations to fall by the wayside? We recently made a survey of the floor wax industry to find out, and the following is a reflection of the combined judgment of industry leaders.

Whether you select a wax or a floor finish depends very largely on the result that you wish to achieve. Wax, as distinguished from plastics, is a material having internal mobility. Depending upon the type of wax you select, you will produce a film, the surface of which can be repeatedly altered by mechanical means without influencing the film continuity. In plain language: You can scuff the film without causing loss of surface protection. By the same token you can rebuff the film and restore or even improve its original luster. Floor life of a good wax film can be extended over a period of many weeks or even months.

Resinous floor finishes, on the other hand, are mainly based on plasticized polymer particles which, when compared with wax, do not have this internal mobility. Even if the floor finish is formulated to produce a very elastic or rubbery film, it still is not a film which can be redistributed and polished like wax. Once marred or scratched off by the action of gritty soil particles, the resinous floor finish film can only be restored by applying a new coat over the marred spot. In this respect it can be roughly compared to a paint or lacquer film. Thus, traffic lanes in busy areas such as building corridors of business buildings, schools, hospitals and factories will require constant retouching which, of course, results in a build-up of coat over coat and eventual discoloration of the floor.

Aside from the build-up problem, there is added labor cost. Any operation carried out by maintenance men is costly, often more so than the price of the treatment materials. A regular "once-over" with the electric buffing machine would probably be more economical than frequent retouching jobs.

Now let us look at the question of floor appearance and texture. Many resinous floor finishes produce an initial gloss of great brilliance, sometimes mirrorlike. So do lacquers and enamels.

Good waxes, on the other hand, have a rich, mellow sheen on the floor. They will produce a protective coating giving the observer a feeling of neatness, floor protection and good maintenance, without sharp, irritating reflections. Even the wax scuffs or the circular brush traces from the buffing machine look good and contribute to this impression.

To sum up: With all the excellent products based on polymer resins, nothing has yet been found to match the maintenance ease of wax coatings whose rich, satinous luster will continue to command the preference of those concerned with the upkeep and protection of large and heavily trafficked floor areas.

Why So Many Formulators Select Duroxon® Waxes

The Duroxon waxes, as a group, are today considered as the most advanced achievement of modern wax technology. They have a combination of properties which are desirable from the point of view of protective wax coatings: No wax available today from any source gives a brighter buffing gloss than the Duroxon waxes. They are pale colored, thus assuring an absolute minimum of floor discoloration. They are very hard and high melting. Their quality is rigidly controlled during synthesis.

Individual grades of Duroxon are available for emulsion applications and applications in solvent systems such as paste polishes and terrazzo finishes. Those Duroxon waxes which are recommended for emulsion applications require a minimum of emulsifiers. They are excellent for high-wax polishes and for resinous floor finishes.

Compared with natural vegetable waxes, the Duroxons offer substantial cost savings.

Duroxon waxes are the exclusive products of Dura Commodities Corporation, 20 Vesey Street, New York, N. Y. Stocks are maintained in New York, Philadelphia, Detroit, Atlanta, Los Angeles, San Francisco, Montreal and Mexico City for the convenience of customers.

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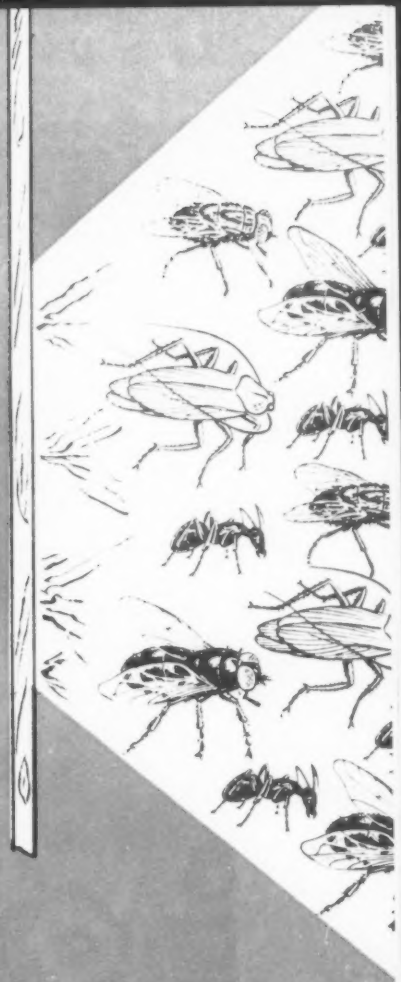

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Petronauba C.....	180 Min.	7 Max.	3 Max.	22-28	50-60
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Petrolite C-15.....	180 Min.	4-6	4-5	15-17	45-55
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C.S.M.A. Meeting in Chicago

Market surveys highlight 43rd mid-year meeting, Drake Hotel, Chicago, May 20-22. Divisions elect new officers for 1958.

SYMPOSIA, statistics and separate, simultaneous sessions of the six divisions of which the association is composed will be among the highlights of the 43rd mid-year meeting of the Chemical Specialties Manufacturers Association. The meeting is being held May 20-22, at the Hotel Drake, Chicago.

The three day meeting opened formally the morning of May 21, at which time four separate but simultaneous divisional meetings were held. The previous day, Monday, May 20, was given over to meetings of the association's board of governors and various committees and subcommittees.

Meeting the morning of May 21 were the following divisions: Aerosol; Disinfectants and Sanitizers; Soaps, Detergents and Sanitary Chemical Products, and Waxes and Floor Finishes. A group luncheon, immediately followed by a general session, the first of the meeting, takes place on Tuesday noon. The general session is to be presided over by Harry E. Peterson, Peterson Filling and Packaging Co., Danville, Ill., and C.S.M.A. president. At the session a nominating committee will be chosen to select a slate of officers and directors for election at the annual meeting next December in Hollywood, Fla.

Two divisional meetings, those of the Insecticide and Automotive Divisions, are scheduled for the afternoon of May 21. At the same time a program of motion pictures made for member companies of the association will also be shown.

The day's final event, a social one, is the open house period of supplier members. This takes place beginning at about 5:30 p.m.

A general session, the second and final one of the meeting, will be the opening feature, Wednesday morning, May 22. Reports of the officers and legal counsel of the association will be given.

George M. Busso of International Business Machines, Inc., Poughkeepsie, N. Y., will address the group luncheon on May 22. He will discuss "Process of Management Development."

A tenth anniversary symposium of low pressure aerosols will be featured at a joint session of the Aerosol and Insecticide Divisions the afternoon of May 22. Simultaneously, the Automotive and Waxes and Floor Finishes Divisions will meet jointly and the Soap, Detergents and Sanitary Chemical Products Division will go into session.

The final event of the day and the meeting will be the reception, cocktail party and banquet and floor show Wednesday evening, May 22.

Chairmen, vice-chairmen and members of the administrative committees of CSMA's six divisions are elected at the mid-year meeting.

Other highlights of the meeting will be the industry reports on sales of aerosol products, brake fluids and anti-freeze. The household and industrial insecticide survey for 1956 will also be presented during a meeting of the Insecticide Division, May 20.

A panel discussion of the (*Turn to Page* 255)

Harry E. Peterson.
President

James E. Ferris.
First Vice-president

H. W. Hamilton.
Secretary

Program for the 43rd Midyear Meeting Chemical Specialties Manufacturers Assn., Hotel Drake, Chicago, Tuesday and Wednesday, May 21 and 22, 1957

Tuesday Morning, May 21
Aerosol Division — Grand Ballroom
Charles E. Beach, presiding

9:00 A.M.

A-1 Address of Division Chairman, Charles E. Beach, John C. Stalfort & Sons, Baltimore.

A-2 Report of the Nominating Committee, R. W. Svendson, Chase Products Co., Broadview, Ill., chairman. Election of Administrative Committee.

A-3 "Hydrocarbon Propellants for Aerosols," by Lyle D. Goodhue and H. Franz, Phillips Petroleum Co., Bartlesville, Okla. To be presented by Mr. Goodhue.

A-4 "European Aluminum Aerosol Containers," by Askel Taranger, Aluminum Union, Ltd., Montreal.

A-5 "Problems in Producing Non-Aerated Aerosols," by G. A. Klitsch and W. E. Graham, Crown Cork & Seal Co., Can Division, Philadelphia. To be presented by Mr. Graham.

A-6 "Your Aerosol Publicity Program," by Norman Odell, G. M. Basford, Co., New York.

A-7 "Report of Annual Aerosol Product Survey" by Frederick G. Lodes, Lodes Aerosol Consultants, Inc., New York.

Disinfectants and Sanitizers Division — Georgian Room
A. G. Bowers, presiding

9:00 A.M.

D-1 Address of Division Chairman, A. G. Bowers, Pioneer Manufacturing Co., Cleveland.

D-2 Report of Nominating Committee, Dr. E. G. Klarmann, Lehn & Fink Products Corp., New York, chairman. Election of Administrative Committee.

D-3 "Use of Antimicrobials on Fruits and Vegetables," by Fred Geib, Dowicide Sales Department, Dow Chemical Co., Midland, Mich.

D-4 "Sporicidal Surface Coatings," by Robert K. Hoffman; Charles E. Feazel and Saul Kaye, Chemical Corps, Fort Detrick, Frederick, Md. To be presented by Mr. Hoffman.

D-5 "Slime Control and Related Microbiological Problems of the Pulp and Paper Industry," by John A. Carlson, Institute of Paper Chemistry, Appleton, Wis.

Soaps, Detergents and Sanitary Chemical Products Division — Walton Room
Clarence L. Weirich, presiding

9:00 A.M.

S-1 Address of Division Chairman, Clarence L. Weirich, C. B. Dolge Co., Westport, Conn.

S-2 Report of Nominating Committee, Melvin Fuld, Fuld Brothers, Inc., Baltimore, chairman. Election of Administrative Committee.

S-3 Symposium. "Ethylene Oxide-Based Surface Active Agents." Moderator, A. B. Steele, Manager of Technical Service, Carbide and Carbon Chemicals Corp., New York.

S-3A "Alkyl Phenol-Ethylene Oxide Surface Active Agents," by J. M. Cloney and Chapin Stevens, Antara Products Division, General Aniline and Film Corp., New York. To be presented by Mr. Cloney.

S-3B "Alcohol Ethylene Oxide and Related Non-Ionics," by Richard D. Fine, Marketing Manager, Chemical Specialties, Atlas Powder Co., Chemicals Division, Wilmington, Del.

S-3C "Tall Oil and Related Fatty Acid-Ethylene Oxide Surface Active Agents," by W. B. Satkowski, Research Department, Inorganic Chemicals Division, Monsanto Chemical Co., Everett, Mass.

S-3D "Thioether Ethylene Oxide Nontonics," by John L. Eaton, Whitemarsh Research Laboratories, Pennsylvania Salt Manufacturing Co., Philadelphia.

S-3E "Ethylene Oxide Adducts of High Molecular Weight Amines," by Vance P. Gregory, Market Development Department, Armour Chemical Division, Armour & Co., Chicago.

S-3F "Polymeric Ethylene Oxide Surface Active Agents," By Warren Stanton, assistant manager, Surfactant Sales Department, Wyandotte Chemicals Corp., Wyandotte, Mich.

Waxes and Floor Finishes Division — French Room
H. J. Mellan, presiding

9:00 A.M.

W-1 Address of Division Chairman, H. J. Mellan, Durez Plastics Division, Hooker Electrochemical Co., North Tonawanda, N. Y.

W-2 Report of the Nominating Committee, B. S. Johnson, Franklin Research Co., Philadelphia, chairman. Election of Administrative Committee.

W-3 "Construction and Operation of Floor Wax Test Floor," by Daniel Schoenholz and George D. Burns, Foster D. Snell, Inc., New York. To be presented by Mr. Schoenholz.

W-4 "Performance of Morpholine in Floor Polish—Rate of Development of Water Resistance," by S. M. Livengood and J. D. Bleistein, Mellon Institute, Pittsburgh. To be presented by Mr. Livengood.

W-5 "Maintenance and Treatment of Concrete Floors," by Harold V. Schmidt, Jr., Federal Varnish Division, Enterprise Paint Mfg. Co., Chicago.

W-6 "Recent Developments in Emulsifiable Polyethylene," by R. Rosenbaum, R. Bach and R. E. Clark, Semet-Solvay, Petrochemical Division, Allied Chemical & Dye Corp., New York. To be presented by Mr. Clark.

W-7 "Tall Oil Fatty Acids in Floor Wax Maintenance," by R. S. Kondrath, A. D. Nevers, J. L. Eaton, Pennsylvania Salt Manufacturing Co., Philadelphia.

W-8 Report of Scientific Committee, Donald E. Whyte, S. C. Johnson & Son, Inc., Racine, Wis.

Tuesday Afternoon, May 21
Gold Coast Room

12:30 P.M. Luncheon

2:00 P.M. General Session

Harry E. Peterson, presiding

Election of Nominating Committee.

Automotive Division — French Room

Harold G. Lederer, presiding

2:00 P.M.

AU-1 Address of Division Chairman Harold G. Lederer, R. M. Hollingshead Corp., Camden, N. J.

AU-2 Report of the Nominating Committee, W. A. Hall, E. I. du Pont de Nemours & Co., chairman. Election of Administrative Committee.

AU-3 Symposium. "Brake Fluids," Moderator, Harold G. Lederer, R. M. Hollingshead Corp., Camden, N. J.

AU-3A "Meaning of SAE 70R Specifications," by Donald H. Hanson, R. M. Hollingshead Corp., Camden, N. J.

AU-3B "State Legislation and Trends," by Robert L. Ackerly, Cummings, Sellers, Reeves & Connor, Washington, D.C.

AU-3C "Aluminum Radiators," by W. O. Emmons, director of research, Harrison Division, General Motors, Lockport, N. Y.

AU-3D "Merchandising of SAE Fluids," by Joseph D. Ryan, Olin Mathieson Chemical Corp., Baltimore.

AU-4 "State Enforcement and Quality Control," by J. E. P. Darrell, State of Minnesota Department of Highways, St. Paul, Minn.

AU-5 "Manufacturing of Brake Fluids," by C. E. Allderdice, Jr., Bell, Inc., Chicago.

AU-6 Report of Brake Fluid Survey by C. E. Allderdice, Jr., Bell, Inc., Chicago.

AU-7 Report of Anti-Freeze Survey by C. E. Allderdice, Jr., Bell, Inc., Chicago.

Insecticide Division — Grand Ballroom

Carlos Kampmeier, presiding

2:00 P.M.

I-1 Address of Division Chairman, Carlos Kampmeier, Rohm & Haas Co., Philadelphia.

I-2 Report of the Nominating Committee, George W. Fiero, Esso Standard Oil Co., New York, chairman. Election of Administrative Committee.

I-3 "Current Problems and Requirements with Respect to Military Pesticides," by Morris Alpert, Deputy Head, Chemistry Section, Bureau of Ships, U. S. Navy, and Ralph W. Bunn, Colonel, MSC, U.S. Army Armed Forces Control Board, Washington, D. C. To be presented by Mr. Alpert.

I-4 "Rodent Control in Relation to the Food Industry," by James DeWitt, U.S. Department of Interior, Fish and Wildlife Service, Patuxent Research Refuge, Laurel, Md.

I-5 "Chemicals in Built-In Protection Against Termites," by Ralph E. Heal, National Pest Control Association, Elizabeth, N. J.

I-6 Report of Household and Industrial Insecticide Product Survey by George W. Fiero, Esso Standard Oil Co., New York.

Motion Picture Program — Walton Room

2:00 P.M. "Goodbye Mrs. Ant," Velsicol Chemical Corp.
"The Family Album," General Electric Co.
"The Story of Light," General Electric Co.
"Clean Waters," General Electric Co.
"Aerosol Film," American Can Co.
"Miracles from the Earth," Dow Corning Corp.
"Of Men and Molecules," B. F. Goodrich Chemical Co.

Tuesday Evening, May 21

5:30 to 9:00 P.M. Open House

Wednesday Morning, May 22

General Session — Grand Ballroom

James E. Ferris, presiding

10:00 A.M.

G-4 Report of Secretary, by H. W. Hamilton, Chemical Specialties Manufacturers Association, New York.

G-5 Report of Treasurer, by P. C. Reilly, Reilly Tar & Chemical Corp., Indianapolis, Ind.

G-6 Report of Association Counsel, by John D. Connor, Cummings, Sellers, Reeves & Connor, Washington, D.C.

G-7 Address of the President, by Harry E. Peterson, Peterson Filling & Packaging Co., Danville, Ill.

G-8 Awarding of Door Prizes.

Wednesday Afternoon, May 22

Gold Coast Room

12:30 P.M. Luncheon
D. M. King, Masury-Young Co., Boston, presiding.
Guest Speaker, George M. Busso, International Business Machines, Inc., Poughkeepsie, N. Y. Topic: "Process of Management Development."

Joint Session: Aerosol and Insecticide Divisions — Grand Ballroom

2:30 P.M.

AI-1 Tenth Anniversary Symposium. Moderators, E. J. McKernan, Seaquist Manufacturing Corp., Cary, Ill., and John A. Rodda, Fairfield Chemical Division, Food Machinery and Chemical Corp., New York.

AI-2 "Aerosol Containers—1947, Present and Future," by Jack Heinen, Continental Can Co., Chicago.

AI-2A "Aerosol Propellants—1947, Present and Future" by Winston H. Reed, Reed Research Corp., Shelton, Conn.

AI-2B "Aerosol Valves—1947, Present and Future," by S. Jack Campbell, sales manager, Continental Filling Corp., Danville, Ill.

AI-2C "Aerosol Filling—1947, Present and Future," by J. H. Fredette, American Can Co., New York.

AI-2D "Aerosol Marketing—1947, Present and Future," by Stewart Watson, McCann-Erickson Advertising Agency, New York.

AI-2E "Consumer Viewpoint Towards Aerosols—1947, Present and Future," by Virginia Gale, Station WGN, Chicago.

AI-2F "Liquified Gas Insecticide Formulas—1947, Present and Future," by R. A. Fulton, U. S. Department of Agriculture Research Service, Entomology Research Branch, Beltsville, Md.

AI-2G "Effect of N.A.I.D.M. and C.S.M.A. as well as Government Regulatory Bodies on Aerosol Industry 1947, Present and Future," by H. W. Hamilton, Chemical Specialties Manufacturers Association, New York.

Joint Session — Automotive and Waxes and Floor Finishes — Walton Room

A. James Coulter and Donald B. Peck, presiding

2:30 P.M.

AUW-1 "Measuring Shock Resistance of Paste Wax," by Francis E. Chapman, Dean R. Zimmerman and Paul D. Bursko, S. C. Johnson & Son, Inc., Racine, Wis. To be presented by Mr. Chapman.

AUW-2 "Fluid Mixing in Chemical Specialties Manufacturing," by James Y. Oldshue, director of research, Mixing Equipment Co., Rochester, N. Y.

AUW-3 "The Merchandising of Floor Waxes and Automotive Waxes," by Neil Salemi, Simoniz Co., Chicago.

AUW-4 "Radioactive Tracer Testing of Auto Wax Thickness and Durability," by Leon Kresser and John D. Saunier, Authority Laboratories Division, Bardhal Oil Co., St. Louis. To be presented by Mr. Saunier.

Soap, Detergents and Sanitary Chemical Products Division — French Room

2:30 P.M.

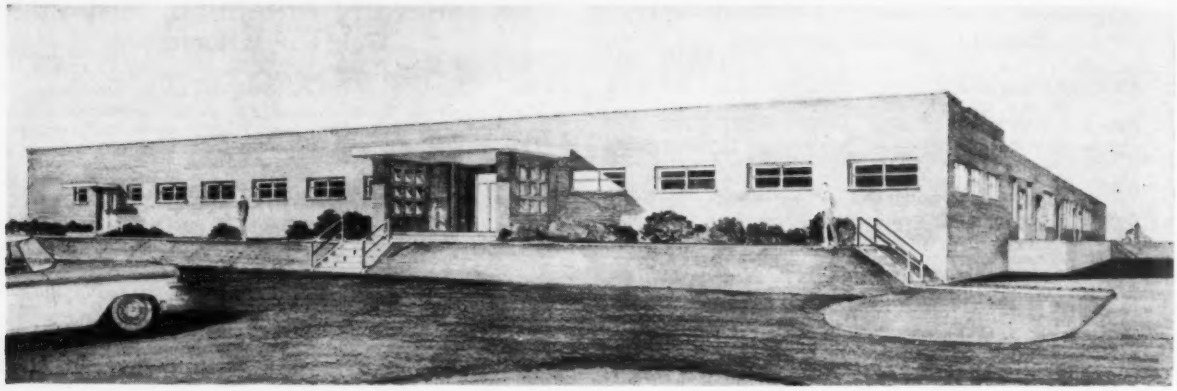
S-6 "Waterless Hand Cleaners," by Willis J. Beach, Technical Service Department, Sugar Beet Products Co., Saginaw, Mich.

S-7 "Isolation and Determination of Non-Ionic Surfactants by Ion Exchange Technique," by Lloyd E. Weeks, Martin E. Ginn and Charles E. Baker, Monsanto Chemical Co., Central Research Department, Dayton, O. To be presented by Mr. Ginn.

S-8 Panel Discussion. "Developing Markets for Detergent Materials in the Soap and Specialty Industry." Moderator, Carl Pacifico, American Alcolac Corp., New York. Panel Members: Robert F. Way, Colgate-Palmolive Co., New York; D. H. Terry, Bon Ami Co., New York; John A. Quinn, Theobald Industries, Kearney, N. J.; and John Bahlburg, Wyandotte Chemicals Corp. Wyandotte, Mich.

Wednesday Evening, May 22

6:00 P.M. Reception and Cocktail Party—Grand Ballroom.
7:00 P.M. Informal Banquet and Entertainment—Gold Coast Room.



Architect's drawing of new and greatly expanded aerosol filling plant of Stalfort Pressure-Pak, Inc., Baltimore custom loaders.

AEROSOL FILLING....

Story of Stalfort & Sons, founded 1868 for years contract packer of chemical specialties, now one of America's leading aerosol custom loaders

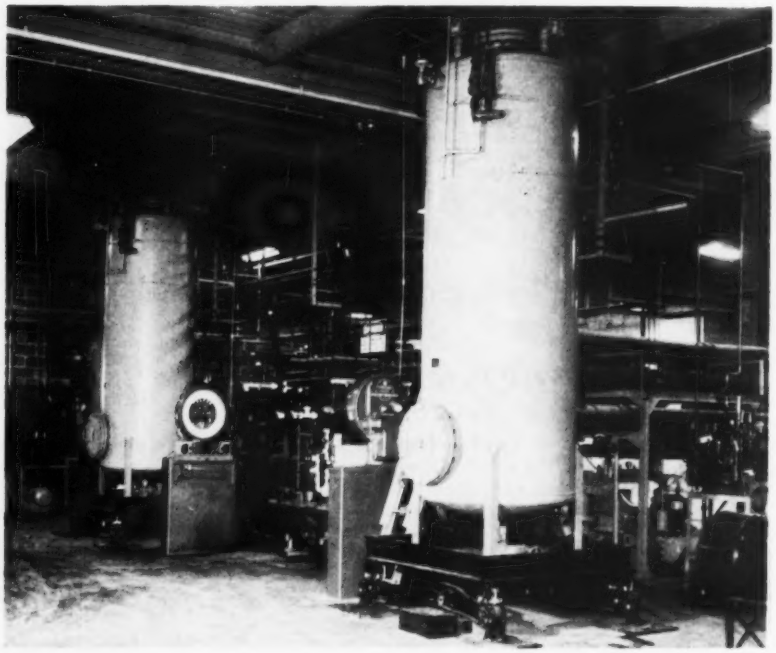
SHORTLY after the close of the Civil War, in 1868, John C. Stalfort & Sons, Inc. started in business in Baltimore. For 88 years since that time, the name has been continuously associated with the chemical specialty manufacturing field. The company became well known as a custom and contract packager of waxes, polishes, cleaners, air purifiers, deodorants, insecticides and allied products.

Then, coincident with the birth of aerosols, Stalfort entered that field too, and like the aerosol market, Stalfort Pressure-Pak, Inc. almost overnight developed a large volume pressure packaging operation which has expanded steadily. Right now, Stalfort is one of the three largest "custom loaders" in the country. Its factory floor space has been increased recently to 57,600 square feet. The new factory area alone contains enough space to hold 88 freight carloads of aerosol containers. The design of the building is such that additional filling lines may be added without interrupting the flow of concentrate, propellant and cans to one end of the line or the continuous movement of filled containers from the other end.

Although John C. Stalfort & Sons and Stalfort Pressure-Pak, Inc. are separate corporations, both have a common family ownership. Edwin D. Stalfort is chairman of the board of the original company and Arthur J. Stalfort is president.

Concentrate and propellant are pre-mixed in pressure tanks shown below and filled in one operation. The advantages of this one-stage cold filled technique, which was perfected by Stalfort, are: minimum loss of propellant; ability to hold close net fill tolerances; and the use of viscous concentrates that normally would not flow through a chiller system.

The interiors of the 10,000 lb. capacity tanks are "lithocoted" to Stalfort's own specifications. The tanks are mounted on a specially designed lever fulcrum system, with the scales controlled by an automatic series of solenoid valves.



Beginning of a double filling line at new Stalfort plant with a capacity of 85 to 110 units per minute. This is one of the three double lines currently in full operation. Each of these lines is capable of either cold fill or pressure fill operation. In this instance, an aerosol shaving cream is being loaded by the pressure fill method.

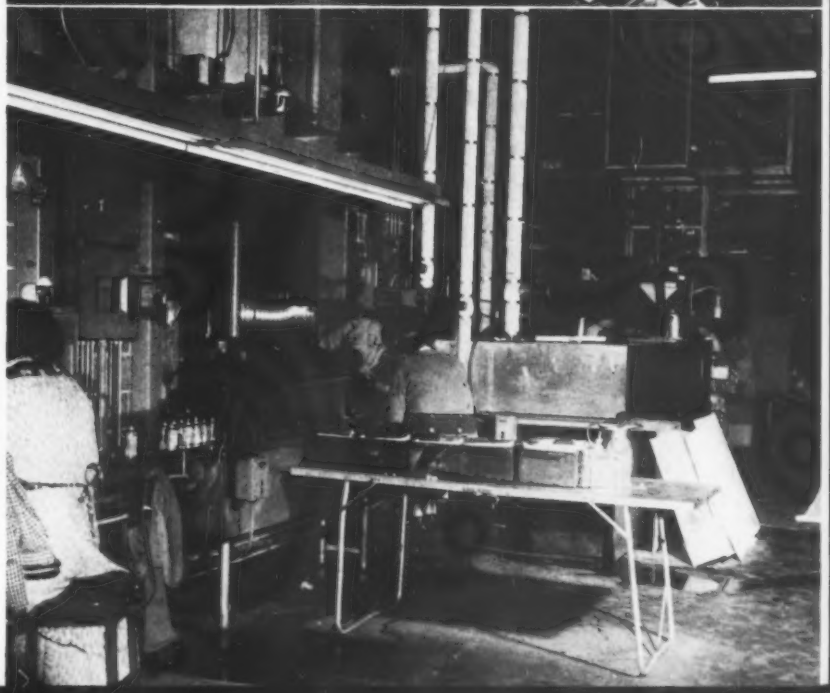
Irving Stalfort is vice-president of the company and Charles E. Beach is vice-president and secretary. Of Stalfort Pressure-Pak, Inc., the aerosol part of the Stalfort set-up, Charles Beach is president and general manager, and John I. Stalfort is plant manager. Richard Krause is technical sales manager for aerosols. Because of space limitations, only the aerosol part of the Stalfort operation is touched upon here.

The Stalfort organization's many decades of experience as manufacturing chemists and as contract fillers in the conventional packaging field, servicing marketers of diversified products, made it a "natural" for unusual success as 1947 dawned and the pressure-pack era began. With nearly a century of basic experience, everything was ready for immediate adaptation of the new aerosol techniques. Stalfort had watched carefully the development of the U.S. Army's "bug bomb"—the bomb that started it all.

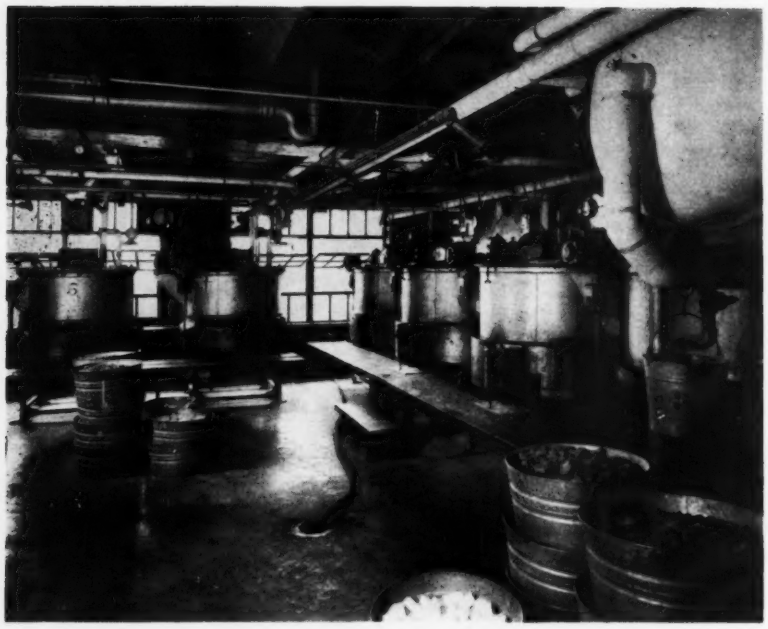
Always there is a fear of the unknown in the minds of owners of national brands when their product is put into a container that leaps

Loaded aerosol containers are held under water on a magnetized conveyor belt to test for leaks, after which protective plastic caps are added, and paper labels applied.

into action at the touch of a button. And well there might be, because aerosol packaging is a revolutionary development. The handling of the product and the container must be entrusted to a source that has the technical skill to protect the quality bespoken by the label. The product is in a new



Cans emerging from Stalfort's unique pasteurization system which has replaced the old fashioned hot water bath for certain applications. Since cans are raised to the minimum 130°F temperature required by I.C.C., through the use of overhead steam jets, this process, in addition to testing the bursting strength of the can, takes up only 1/3 the space normally required for this operation, and insures a much cleaner container.

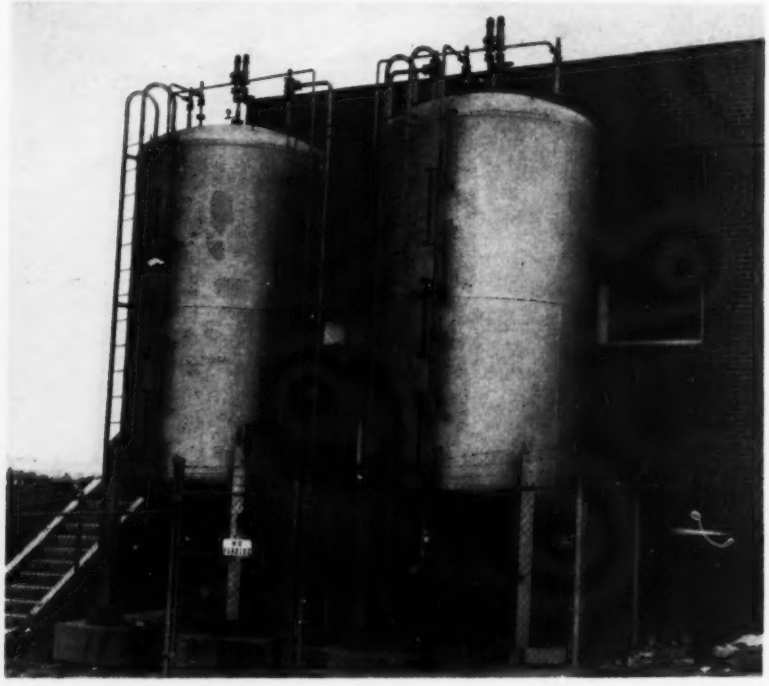


Bulk mixing tank at the main plant. Stalfort is one of the few custom packers with the facilities to formulate, manufacture, and pack waxes, polishes, cleaners, and insecticides, in addition to aerosols, in their customers' cans or bottles.

package, yes; but can it be in the slightest degree inferior to its conventionally packaged teammate? No. Never. This is why, according to the folks at Stalfort, nationally advertised names on which millions of dollars have been spent, usually prefer to leave the intricacies of aerosol packaging in the hands of specialists.

The original, heavy containers for the Army DDT "bombs" were a far cry from the trim, tight and light pressurized packages of today. There have been great improvements in the mechanics of the "cans," likewise great strides in perfecting chemical adaptation of concentrates, much of the latter having been done by laboratories of the filler companies.

100,000 pound capacity propellant bulk storage tanks eliminate handling of individual storage drums and assure a constant source of propellant at a uniform pressure.



Propellants have kept pace with these improvements. They are designed to do a complete job of expulsion at an exact pre-determined density and at maintained efficiency from first to final touch of the valve button by the consumer, and in addition, empty the can of its contents.

The two aerosol filling methods utilized in the Stalfort plant are the *cold filled process* and the *pressure filled process*. For shaving creams, etc., where a small amount of propellant is required the pressure filled method is employed. The cold filled process is used for deodorants, insecticides, lacquers, etc., where a large amount of propellant is needed.

Propellant is stored by Stalfort in bulk tanks that hold from 20 to 30 tons of liquid. The propellant goes through three refrigeration units that lower temperature to −40°F. The concentrate goes through two separate units that lower the temperature to −20°F. The propellant and concentrate then can be carefully weighed and mixed in bulk in a large refrigerated tank to be loaded in cans together. Or the concentrate and propellant can be piped direct to the filling machine where they are measured and put in cans separately. The valve is then inserted in the can and sealed. Next the can is heated to 130°F. in a hot water bath to test for leaks. Finally, after the valve of each unit is spray-tested, cans are packed. This is the *cold filled* procedure.

The *pressure filled* process is basically the same, except that the concentrate is put in the can, the valve is put on and sealed, then the propellant is forced into the can through the valve under pressure. Such pressure loading is often used when the product has an active ingredient that will freeze at temperatures below 32°F. The main

difference between pressure loading and cold fill loading is the difference in the time interval when the liquid propellant is put into the aerosol container. In both procedures, the propellant is a liquid when loaded. In pressure loading, it is kept liquid by holding it under pressure. In cold fill loading, the propellant is kept liquid by keeping it cold.

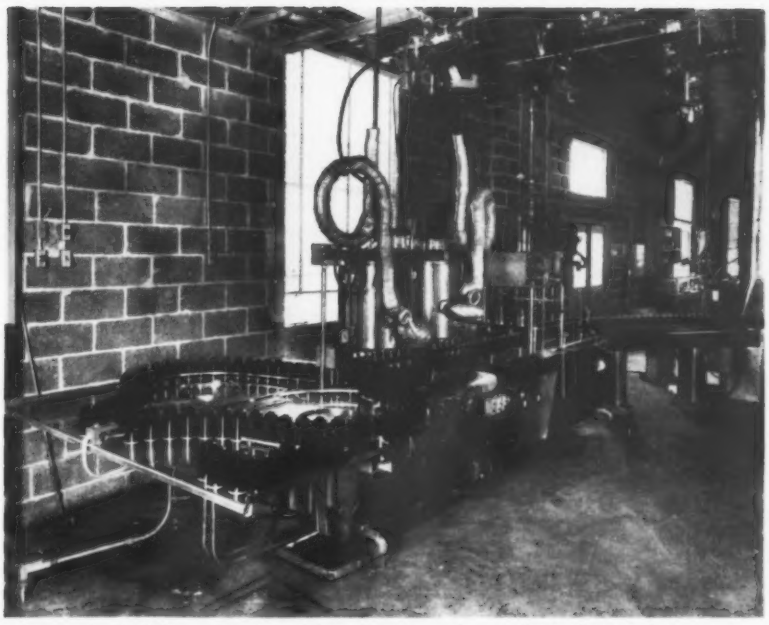
Pressure reduces the propellant to a liquid in the storage tanks. From the storage tanks, it is pumped through a dehydrator which reduces water to one part per million. The propellant is then cooled by means of separate coolers until it reaches −30°F., a temperature at which it remains in a liquid state so it can be handled easily.

The concentrate is pumped into coolers and chilled down to around 0°F., or whatever temperature the laboratory has designated for that product. Gas and concentrate now being in liquid form, the filling operation then takes place under accurate control.

To make certain that cans will not leak under normal room temperatures, they are next submitted to the hot water bath test. The cans are held under hot water on a magnetized conveyor belt until the can and its contents reach a minimum temperature of 130°F. If there is leakage, bubbles will show in the water. If there is a container defect, the extra pressure developed at this temperature may cause a rupture in the container.

In addition, manual and visual tests are carefully made to insure against leakage. In fact, such tests are made by inspectors from beginning to end of the assembly line for a total of seven inspections, the final one being a manual test to judge exact working performance of the valve and dispersal of the spray. Nothing is left to chance.

At the Stalfort plant, there are three separate double filling lines, each with a capacity of 85 cans per minute, and a fourth filling line with a capacity of 2500 cans per 8-hour shift, for smaller orders. There are 2000 square feet given over to a modern research and development laboratory. Increased emphasis is being put upon laboratory research and control because of the exacting tolerances that must be maintained to keep a uniform fill on high speed machines. Every five minutes samples are taken from each filling line and checked to determine such things as the vapor pressure curve, specific gravity and density, temperature, and stability. This increased laboratory space is important not only to maintain quality control, but for use in developing new products. Many of Stalfort's customers bring in only the idea for a new product. It is then up to the filler to make such an idea a reality.



Standard cold filling operation of hair lacquer and propellant. Illustrated is a two-phase filling process whereby the cold propellant starts to volatilize and purges the can before introduction of the concentrate.

Two-stage propellant chiller system and a three-stage concentrate chiller system. These new high capacity chiller systems can supply enough cold propellant and concentrate to enable two double lines to run at maximum capacity. Under the new plant expansion, additional chiller units have been added to enable all lines to operate at full capacity with reserve refrigeration for change over.

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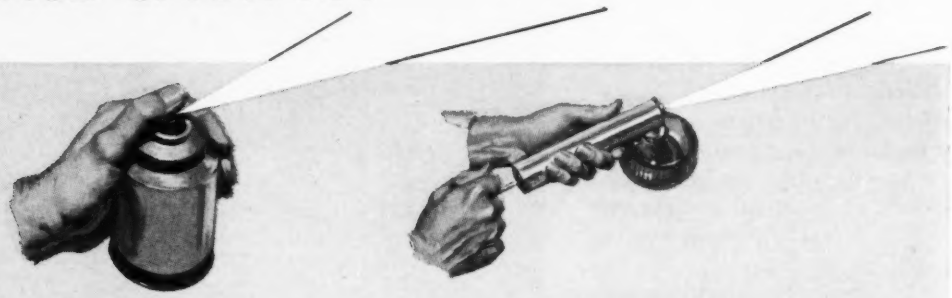

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	% Flies on Floor					% Dead
	2 min.	4 min.	6 min.	8 min.	10 min.	24 hrs.
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1.00% methoxychlor	16	71	95	97	99	85

71% KD in just 4 minutes proves methoxychlor is much more than a lethal agent alone. Du Pont methoxychlor is one of the least expensive insecticides you can use in many effective combinations. Contact the district office nearest you.

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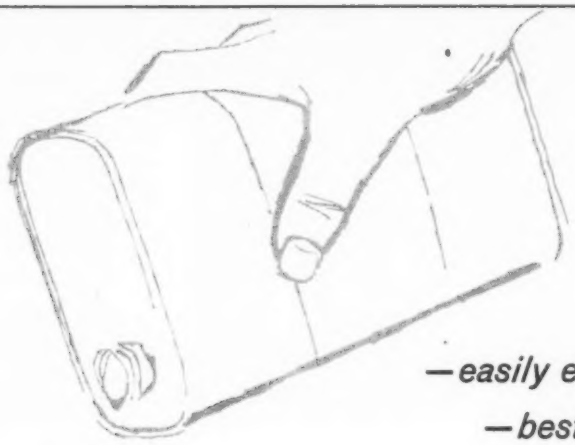

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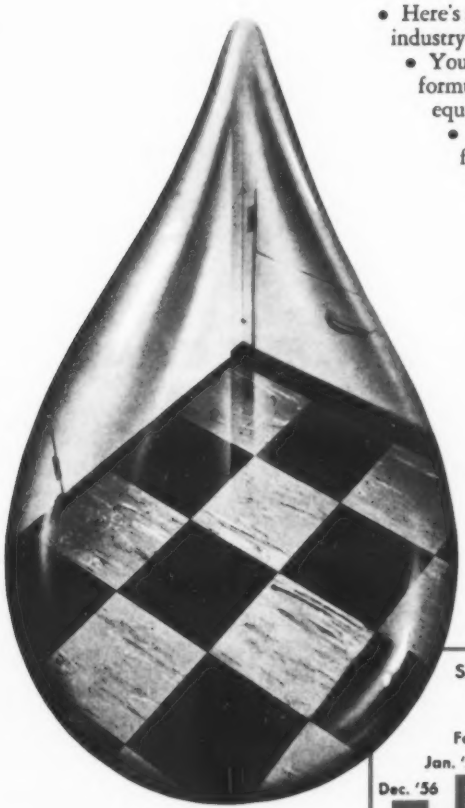

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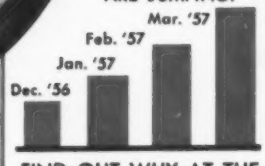

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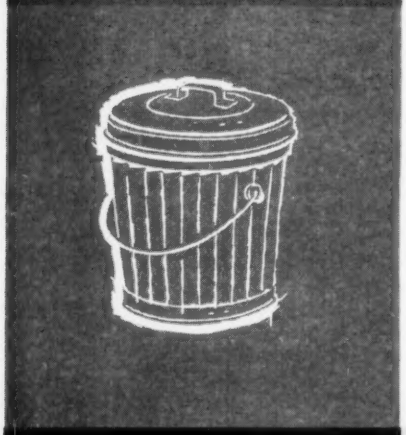

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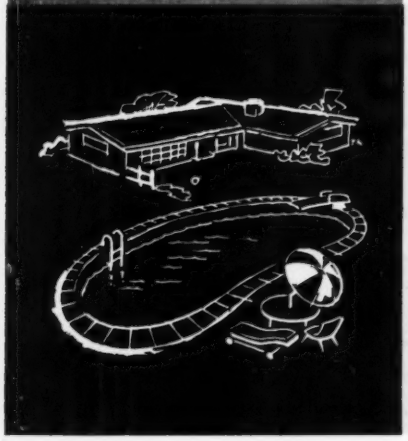

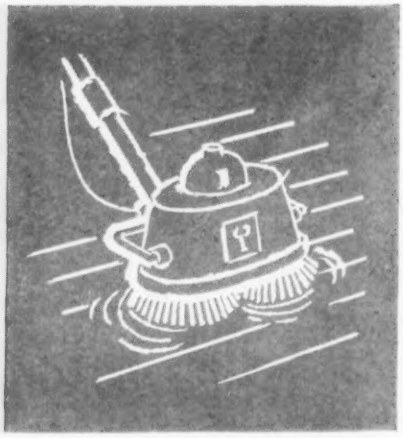

Treatment of materials and articles with bacteriostats and fungistats and a review of status of such products under the Federal Insecticide Act.

Antimicrobial Additives

THE practice of adding antibacterial and antifungal chemicals to paints, plastics, rubber, textiles, and paper is increasing rapidly. The Federal Insecticide, Fungicide, and Rodenticide Act (1) defines as an economic poison among other things any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating fungi, mildews, molds, yeasts, and bacteria, except those sold solely for use on or in the living body of man or animals. Therefore, it is necessary to review the status under this law of the various chemicals offered as additives for these materials and of the various finished products to which they have been added.

There can be no doubt that chemicals or mixtures of chemicals sold to manufacturers to prevent, destroy, repel, or mitigate bacteria and fungi in or on paints, rubber, plastics, textiles, and paper or articles fabricated therefrom during processing or following manufacture during periods of storage, merchandising, and use would be classed as economic poisons as that term is defined in the Act. Thus, all such chemicals must be registered before they are shipped in interstate commerce.

As to the various materials and articles to which these chemicals have been added, their status under the law must be determined according to the intended use of the material or article itself as opposed to the chemicals which may have been incorporated in it or adsorbed to its surfaces. Claims made or implied for these materials or articles in the labeling or advertising employed in connection with distribution must be used as the basis for determinations as to intended use. The general problem of determinations as to intent has been discussed at some length in Interpretation No. 3 (f) of Service and Regulatory Announcements No. 167. (2) If the treated materials or articles are not sold under representations indicating that their use will afford protection or a measure of protection to other materials, articles, man, animals, or living plants against bacteria and fungi, then they would not necessarily be classified as economic poisons subject to the provisions of the law and would not have to be registered.

Antifungal Treatments

THUS, mildew-proof or mildew-proofed materials are not considered to be economic poisons and do not have to be registered whenever the representations to the public clearly indicate that the material or article itself has been treated to protect it from attack by fungi so that it will be more serviceable and retain its utility for longer periods of time. However, if the intended use of the treated materials or articles is revealed by claims, representations, or directions for use to be that of protecting other things or persons, then such materials would be considered economic poisons and would require registration. Mildew proofed building materials, cotton, fabrics, paper containers, and the like are not normally considered to be economic poisons, but a cotton or jute fabric treated with an antifungal or antibacterial chemical and represented to have value in protecting plants against invasion by bacteria and fungi would be an economic poison as defined in the Act. Likewise, a mildew-proofed paper would not ordinarily be considered an economic poison, but if a paper to which an antifungal chemical has been added was represented as having value in protecting fruit, cheese, or any other perishable commodity against invasion and spoilage by fungi, then the treated paper itself would be considered an economic poison subject to all provisions of the law. This is in line with interpretations that mothproof or mothproofed woolens are subject to the provisions of the law only if bearing claims such as "kills moths," "repels moths," "prevents moths," or "eliminates moths" which imply control activities in

By L. S. Stuart

In Charge, Bacteriological Unit
Pesticide Regulation Section, Plant Pest Control Branch
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the surrounding spaces in addition to protection of the fabric itself.

Where the article or material only is represented as enjoying protection, it is reasonable to assume that the public interest may be adequately safeguarded by regulation of the chemicals or mixture of chemicals sold to the manufacturer thereof. However, in cases where the manufactured articles and materials are represented as possessing economic poison values in themselves, there is little or no reason to believe that the consuming public could be afforded the protection assured by the law simply by regulating the chemicals employed in fabricating the materials or articles.

In line with the interpretations outlined above, mildew-proof and/or mildew-resistant paint does not come under the provisions of the Act if it contains certain additives to make the paint itself mildew resistant and provided the product is described solely as being itself resistant to changes caused by mildew. The phrase "resistant against the effects of mildew" has in the case of paints been construed as covering prevention of mold growth and deterioration of paint in the containers in which it may be shipped, sold, or held prior to application and also of mold growth and discoloration in or on the dried paint film after application. In the last named instance, clear-cut classifications are frequently made difficult by labeling, advertising and other types of representations vaguely implying secondary values in protecting surfaces to which the paint is applied against contamination by microorganisms. Paints sold to protect wood or other materials from decay by fungi or bacteria or to prevent the growth of fungi or bacteria on the floors, walls, and ceilings of spaces to avoid the subsequent inoculation and contamination of materials or articles being processed or stored therein and/or to give some measure of protection to animals or plants occupying such spaces against fungi or bacteria are economic poisons and must be registered.

Antibacterial Treatment

THE Act itself clearly identifies bacteria and yeast as fungi. Therefore, it seemed reasonable to extend the policies accepted for items treated with antifungal or mothproofing compounds to those treated with antibacterial agents. There should be little or no objection to this as a general policy since bacterial decomposition is well recognized as a major factor in the deterioration of these materials. Thus, use of such claims as "germ-proof," "bacteria - proofed," "bacteria-resistant," and "germ-resistant" in labeling would not necessarily indicate an intent which would identify a product as an economic poison. However, if used with text, designs or illustrations which claim or clearly imply that not only the product itself is protected against bacteria but also that it affords a measure of protection against bacteria to other materials, articles, or things including man, animals, and living plants, then their use would have to be construed as identifying the product as an economic poison subject to all the provisions of the Act.

Importance of Claims

FOR example, an article represented as "germ-proof" and sold with advertising containing illustrations of effectiveness against commonly recognized bacteria of an infectious nature could reasonably be identified as an economic poison. This type of illustration would be sufficient to identify the intent of use as that of affording to the user of the article a measure of protection against such bacteria. Likewise, a bacteria-resistant and mildew-proof floor paint recommended for use on the floors and benches of locker-rooms with claims of effectiveness against the pyogenic bacteria *M. pyogenes* var. *aureus* and *T. interdigitale,* the fungus causing athlete's foot, would obviously be an economic poison since neither organism has any significance from the standpoint of the paint film itself. Both are well recognized as organisms infectious to man, and it would follow that the intent of using such claims in labeling or advertising was such as to identify the product as an economic poison; namely, to assure the public that the paint afforded a measure of protection against infection by these organisms. On the other hand, an article represented as germ-proof and fungus resistant and accompanied by labeling with illustrations as to resistance against the non-pathogenic bacteria *Aerobacter aerogenes* and a saprophytic fungus such as *Chaetimonium globosum* would not be considered an economic poison unless, of course, other claims were made which might so identify it.

Claims such as antiseptic, self - antiseptic, self - sterilizing, actively germicidal, self-disinfecting, and self - sanitizing made in the labeling or otherwise for any textile, plastic, rubber, paper, or paint or articles made therefrom would identify them as economic poisons and necessitate registration. It should, of course, be understood that materials or articles represented as having been sterilized, disinfected, or sanitized by chemical, heat or combination chemical and heat processes prior to sale, would not be so classified unless these processes were represented as providing economic poison benefits of a continuing nature to the purchaser such as "permanently antiseptic," "self-sanitizing in use," or "actively self-disinfecting in use."

In the case of treated materials and articles one cannot state without equivocation whether use of the words "bacteriostatic" and "fungistatic" or such phrases as "germ-proof," "bacteria-proof," "inhibits bacterial growth," "inhibits mold growth," "retards the growth of bacteria and germs," "repels bacteria, fungi and germs," and "prevents the growth of bacteria, germs, and fungi" would or would not serve to identify a product as

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This photo shows the color of regular Pyrocide 175 in a typical aerosol formulation.
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This photo shows the color of the new Pyrocide 175 RC (reduced color) in a typical aerosol formulation.

THE New MGK

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* Meeting the demand for a very light 20% pyrethrum concentrate for use in aerosol sprays, we now offer Pyrocide 175 RC (reduced color). This clarity has been attained with no sacrifice in knockdown strength and with no loss in the stability of the pyrethrum concentrate.

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SEE TESTS NEXT PAGE

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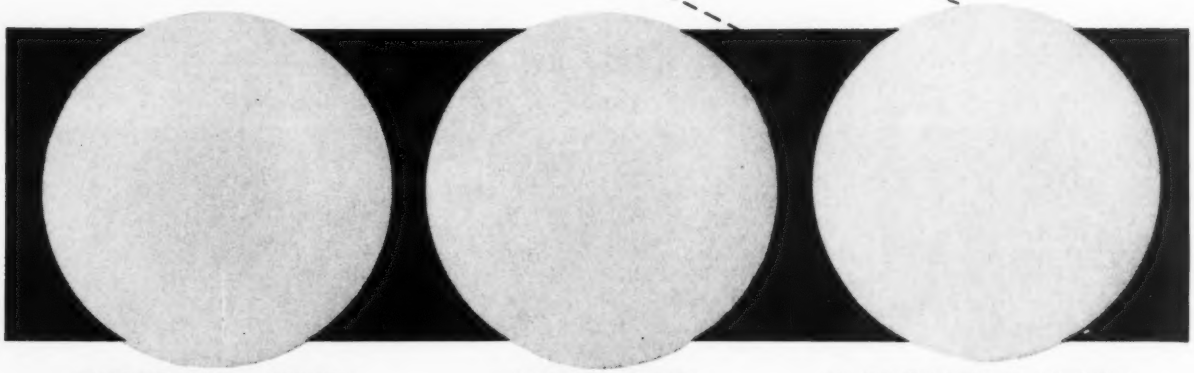

SOAKING WET

Showing Pyrocide 175 RC (reduced color) in a typical aerosol formulation immediately after being applied to cotton fabric.

JUST DRY

Showing Pyrocide 175 RC (reduced color) in a typical aerosol formulation just as the liquid has dried on the cotton fabric.

4 HOURS LATER

Showing the same cotton fabric after being exposed to light for four hours after drying.

THE *New* MGK

*Pyrocide 175 RC**

Of course no one is going to drench fabrics with their aerosols, but these actual tests show no trace of color or stain four hours after applying a typical Pyrocide 175 RC (reduced color) aerosol formulation to the fabric with an eye dropper.

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Products to which chemical agents are added to control fungi, bacteria and insects may be considered as economic poisons depending on effects claimed.

an economic poison. But their unqualified use in labeling would undoubtedly be sufficient to warrant an investigation as to actual intent.

End Use Determines Status

IT is possible to employ all of the above terms in a manner so that they imply only protection of the item in question. It is also possible that their use in conjunction with other claims, illustrations, designs, and representations would clearly serve to identify the product as an economic poison requiring registration. For example, a claim such as "bacteriostatic, inhibits the growth of bacteria and fungi assuring continuous hygienic protection to the wearer" on a girdle would identify such an item as an economic poison. A representation such as "fungistatic, reduces the danger of athlete's foot infection" for a stocking would identify it as subject to all requirements of the law. The claim "germ-proof" on a paint recommended for use in hospitals accompanied by illustrations of surgical wards and other designs clearly implying an improved measure of protection to occupants of such premises against infectious germs would be sufficient to identify an intent of use which requires registration.

Once treated material and articles have been established as economic poisons their registration gives rise to a number of individual problems not encountered in the case of other chemical compounds.

Labeling Rules

THE law requires that the labels of all economic poisons bear net content and ingredient statements in prescribed forms, necessary caution and warning statements, and adequate directions for use, along with a suitable product name, and name and address of the manufacturer or distributor. The regulations prescribe that the net content shall be stated in terms of weight or measure in general use by consumers and users. Thus, with articles such as stockings "1 pair" might be considered as meeting the requirements of the law; with a tooth-brush, "1 tooth-brush," in the case of a bolt of cloth, a declaration of "1 bolt" containing a prescribed number of yards of a defined width and weight might suffice, and in the case of sheet paper, a statement such as "12 sheets" of stipulated dimensions including width, length, and thickness might be necessary.

In the ingredient statement, the added antibacterial chemical or chemicals must be listed as per cent by weight. The following form is usually preferred:

Active Ingredients:

_____	____%
_____	____%
Inert Ingredient:	
_____	____%
Total	100%

The inert ingredient comprises the material to which the chemicals in question have been added such as plastic, paper, wool, cotton, and the like. Where the chemical reacts with treated material to form a new compound, it might be possible to identify the entire material as active using a statement "active ingredient 100%" and at the same time listing the most descriptive chemical name available. In such instances, the burden of proof as to the existence of the chemical claimed would rest on the manufacturer.

Obviously there are many items where directions for use may not be necessary to protect the public. However, if it is necessary to handle or use the material or article in a special manner or a manner differing from that classified as normal for materials and articles of that nature, in order to obtain the economic poison benefits claimed, then it would be necessary to point this out in the labeling. The necessity for caution and warning statements will be governed by the composition of the material and the type of intended use. For example, the requirements for an article of clothing normally in close contact with the body might differ from that of another article made of the same treated material where intimate contact with the body is not a likely consequence of normal use.

Residual Activity

INFORMATION is very meager on the measure of health protection afforded to man or animal by the residual action of antibacterial chemicals applied to inanimate surfaces with which they come in frequent contact. By contrast, the treatment of animate objects with residual chemicals has been successful in the control of plant diseases, for instance. Antibiotics and sulfa drugs used in the control of disease in man and animals can also be classified as residual agents. In both instances residuals have been more effective than rapid contact bactericides, and their success is clearly demonstrable. The case for the protection of inanimate materials by residual chemicals against the harmful effects of bacteria and fungi has also been clearly established. But in only a few isolated situations has it been clearly established that the use of residual antibacterial agents on inanimate materials and articles is of practical value in the protection of animals, plants and objects. In fact, there is rather a sharp contrast between the number of practical benefits which can be demonstrated and the many advantages commonly claimed and implied.

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bed pads, etc. with antibacterial agents has been demonstrated to be of practical value. Formation of ammonia from urea excreted by infants and incontinent patients is caused by bacterial action which is thus prevented. Treatment of surgical drapes with a residual bacteriostat prior to heat sterilization has been shown to keep down the bacterial count during long operations. Where temperatures and humidity are at high levels this does contribute to the protection of the patient. However, popular belief that a germicidal chemical can be added to a solid material and render the surfaces of that material and articles made therefrom actively germicidal in use, is supported by little, if any, scientific evidence.

To obtain a practical germicidal result the germicidal chemical must come into contact with the germ in the right medium. Bacteria or germs are "aqueous chemists" and in the absence of water the bacteria cannot contact or react with a germicidal chemical. Thus, on a completely dry surface at zero per cent relative humidity, a living dehydrated bacterial cell is unaffected by any known germicidal chemical. Absorption of moisture by the material from the air or the introduction of moisture from other sources is a necessary prerequisite for any reaction. This naturally raises certain questions: How much moisture must be present to allow for the growth of the cell? How soluble or how particulate must the absorbed chemical be to insure an antibacterial effect? How much moisture must be present to mobilize the residual chemical so that it will prevent bacterial growth? How much of the absorbed chemicals must be mobilized to assure a "cidal" result as compared to that for a "static" effect? Adequate answers to these questions are not available because these factors vary tremendously according to organisms, chemicals, and materials. In the absence of adequate experimental data it is impossible to determine which treatment will be most effective for a specific application or what degree of antibacterial activity may be expected.

Test Procedures

NUMEROUS test procedures are currently in use and others have been proposed for demonstrating the effectiveness of residual antibacterial treatments. Most of these tests yield results of a purely presumptive nature lacking reliable correlation with ordinary use conditions. The agar-plate methods (3) was devised by the Food and Drug Administration as a test for inhibitory properties for substances remaining in contact with the body and is widely employed. A clear zone of inhibition on the inoculated and incubated agar plates in this test constitutes strong and presumptive evidence of the existence of bacteriostatic or fungistatic properties, depending on the test organism employed. It must be remembered, however, that the usual conditions of agar plate culture may bear little or no resemblance to the conditions under which the material or article may be recommended for use. But, the test is versatile enough to allow for certain compensations: the test organism may be varied to employ almost any bacteria or fungi known to have significance in the intended use and the composition of the medium can also be varied to support good growth of the chosen test organism and/or to simulate conditions of actual use.

Even with modifications as indicated above, results obtained by this method must be interpreted as presumptive subject to confirmation by results obtained in actual use or in more specific laboratory procedures. Positive results by the agar-plate method are not evidence of germicidal, disinfecting, or sanitizing activities. They merely demonstrate the presence of bacteriostatic and/or fungistatic properties. To determine the presence of actively germicidal, self-sterilizing, self-disinfecting, and self-sanitizing properties, a test similar to that described by Hoffman, Yeager, and Kaye (4) should be employed. This method provides a procedure for uniformly inoculating a dry surface with dried living cells or spores followed by exposure of the dry inoculated surfaces under conditions of varying relative humidity. After significant exposure intervals, counts of viable organisms or spores are made and by comparing these with counts on inoculated untreated materials or articles, the activity of the adsorbed chemical against bacteria and/or fungus spores can be measured quantitatively. From these results, it is possible to make some reasonably precise estimates whether the treated material or article could be expected to yield self-sterilizing, self-disinfecting, or self-sanitizing benefits in the various uses for which it may be recommended.

Summary

On the basis of the evidence available at the present time, claims for most of the uses of materials or articles treated with antibacterial or antifungal chemicals should be restricted to benefits of a mitigating nature. Situations in which absolute values such as self-sterilization and self-disinfection could reasonably be anticipated are uncommon.

A new and expanding market for antibacterial and antifungal chemicals can be developed if these mitigating activities can be shown to be sufficiently important. For instance, if carriers of infectious agents or contaminants could be made demonstrably less hazardous by the adsorption of chemicals of proven bacteriostatic, fungistatic, and count reducing activity a great potential market for such treatment would open up. A vision of this potential market has prompted the growing practice of treating paints, toys, wearing apparel, bedding, and a host of other items with antimicrobial chemicals. Unless the list of actual situations in which truly practical benefits can be an-

(*Turn to Page 233*)

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HYDROCARBON Propellants for Aerosols

By Lyle D. Goodhue and H. Franz*
Phillips Petroleum Co.
Bartlesville, Okla.

DURING the development of the liquefied gas method of producing aerosols, numerous possible propellants were considered. They were chosen from chemicals whose vapor pressures are high enough at ordinary temperatures to provide the necessary energy to make a good dispersion of a dissolved substance. Most of these propellants fell into the class of easily liquefiable gases commonly employed as refrigerants. Such propellants as hydrocarbons, halogenated hydrocarbons, carbon dioxide, sulfur dioxide and even ammonia will produce an aerosol.

The requirements for an aerosol propellant are, however, more exacting since in most instances they must be safe to spray in the presence of man or animals. The dispersion of very toxic insecticides, as in greenhouse aerosols, is an exception where the toxicity of the propellant is of minor concern. Safe use would also include freedom from fire hazard.

Besides these requirements a propellant should have good solubility for the material to be dispersed although this property can be modified somewhat by cosolvents. The propellant must be inert to the solute and not corrode the container no matter what formulation is used. It must be stable under practical conditions. It should not be colored or develop a color in storage. The vapor pressure must be in a practical range or near enough to be modified by another low boiling liquid.

These and other minor requirements rule out many likely propellants. Of the easily liquefiable gases known today, only certain hydrocarbons and halogenated hydrocarbons have proven acceptable. As everyone familiar with this process knows, dichlorodifluoromethane has been the backbone of the aerosol industry and, unless some radically new chemical is discovered, it will remain in this category for a long time to come. Cost is about the only disadvantage.

There have been, however, many improvements in containers which, allow different types of formulations. It is now possible to use certain of the cheaper hydrocarbons with reasonable freedom from their one disadvantage, namely; flammability. Experimental and commercial applications confirm that the hydrocarbons used should be of relatively high purity to eliminate odor and oil contamination problems and provide propellant uniformity to give consistent formulation results. Non-stenched, deoiled, low sulfur hydrocarbons of this type, as well as custom blends to specified vapor pressures or compositions, are available in experimental and commercial quantities.

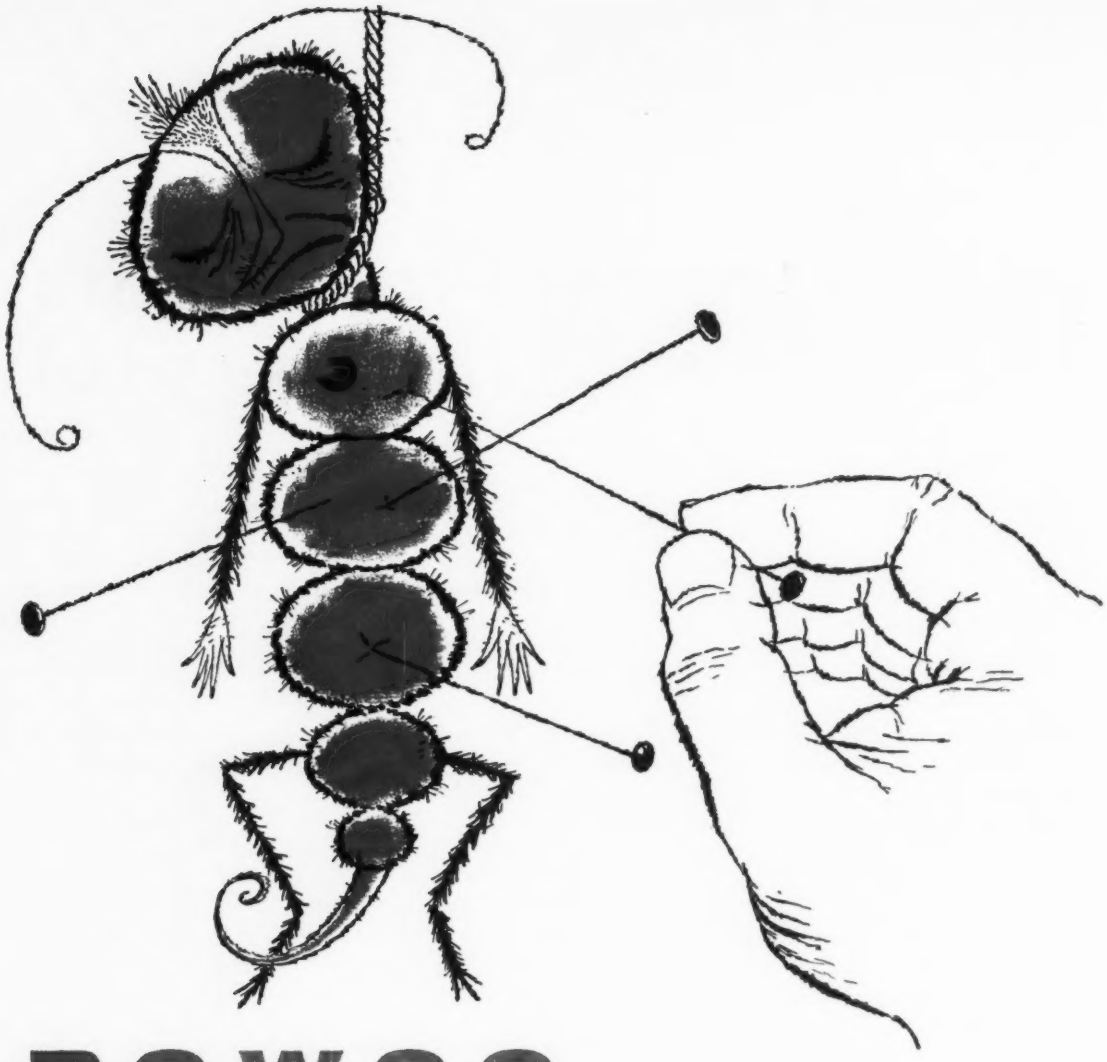
This paper summarizes the use of the lighter hydrocarbons in aerosol formulations and gives physical and engineering data useful to the formulator and packer. Suggestions and references to literature on the safe handling of the hydrocarbons are included.

Methods of Using Hydrocarbons

BUTANE or propane or mixtures of the two will produce an excellent aerosol. Because of their flammability they are not generally practical in formulations requiring a high percentage of propellant. However, they have proved quite practical in the several general applications described in the following paragraphs.

During World War II when dichlorodifluoromethane was in short supply hydrocarbons were proposed as a diluent. The flammability limits of butane and propane in mixtures with dichlorodifluoromethane were determined by the Bureau of Mines. (1) It was found that approximately 25 per cent by volume could be substituted before a flammable mixture resulted. This mixture was proposed but never

* Paper presented before 43rd midyear meeting, Chemical Specialties Manufacturers Association, Chicago, May 21, 1957.



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used although it was tried by some packers later. Airosol, Inc., used pentane in much the same way as trichlorofluoromethane to reduce the pressure of the propellant in the first commercial low pressure aerosol formula. The finished formulation was not flammable.

A second and rapidly growing use for hydrocarbon propellants is in formulations containing a relatively high percentage of water and a small amount of propellant. In some formulations the propellant is carried in the dispersed phase and in others it exists as a floating layer. The low density of the hydrocarbon is a distinct advantage in the three phase aerosols. (2) The curved dip-tube can extend to the bottom of the container without danger of ejecting the propellant. This is not accomplished as easily with high density propellants. Hydrocarbons can also be used in non-foaming propellant emulsions where the proportion of water is high enough to minimize the flammability.

Properties of Hydrocarbon Propellants

THE formulator of an aerosol containing a hydrocarbon propellant should have available a complete set of properties that could be a factor in the performance and safety of the finished formulation. Those properties believed to be fundamental have been gathered from reliable sources and are presented in this section.

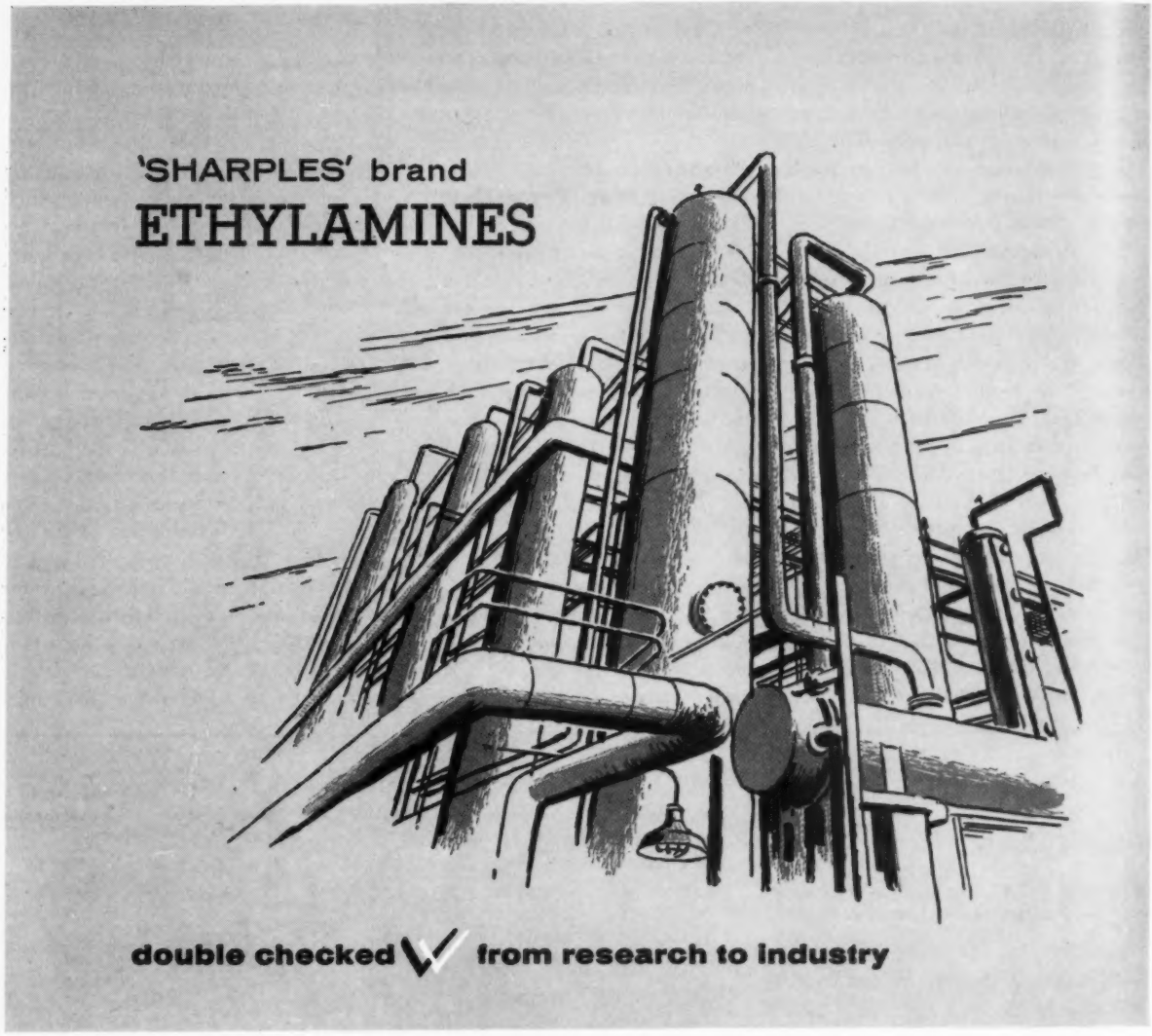
Table I (3) gives numerous physical data in both the metric and English systems. Values are given for propane, isobutane, *n*-butane, iso-pentane, *n*-pentane and *n*-hexane. The last three are not propellants at ordinary temperatures but can be used as diluents. Some of these data such as the density and pressure that vary greatly with the temperature are expanded in the following curves.

Figure 1 (3) shows how the vapor pressures of six single hydrocarbons vary with temperature. Sometimes a single hydrocarbon will provide the desired pressure but more often a blend of propane and butane or isobutane is preferred. Figure 2 (4) shows a family of curves that give the vapor pressure of various mixtures of butane and propane. Complete data for such a graph with mixtures of propane and isobutane were not available. The pressure for the same percentages would be about 10 pounds higher for isobutane-propane mixture when the isobutane is the major component. A blend containing 84 per cent isobutane and 16 per cent propane gives a pressure of 45.4 and a 65-35 mix-

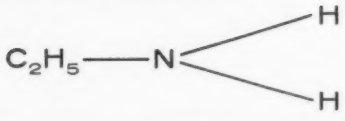
Table I. Physical Constants of Paraffin Hydrocarbons (3)

	Propane	Isobutane	n-Butane	Isopentane	n-Pentane	n-Hexane
Molecular Formula	C_3H_8	C_4H_{10}	C_4H_{10}	C_5H_{12}	C_5H_{12}	C_6H_{14}
Molecular Weight	44.094	58.120	58.120	72.146	72.146	86.172
Melting Point at 14.696 Lbs./sq. in. Abs.						
°C	-187.7	-159.4	-138.3	-160.6	-129.7	-95.4
°F	-305.9	-255.3	-216.9	-257.1	-201.5	-139.7
Boiling Point at 14.696 Lbs./sq. in. Abs.						
°C	-42.1	-11.7	-0.5	+27.9	36.1	68.7
°F	-43.8	+10.9	+31.1	+82.2	97.0	155.7
Density of Liquid						
Specific Gravity at 60/60°F	0.508	0.563	0.584	0.625	0.631	0.664
°API	147.0	119.8	110.8	94.9	92.7	81.6
Lb. per Gal. at 60°F	4.23	4.69	4.86	5.20	5.25	5.53
Gal. per Lb. Mol at 60°F	10.41	12.38	11.94	13.84	13.71	15.57
Density of Vapor						
60°F 14.696 Lbs./sq. in. Abs.***						
Specific Gravity (air=1.00)	1.522	2.006	2.006	2.491	2.491	2.975
Lb./m. Cu. Ft.	116.2	153.1	153.1	190.1	190.1	227.1
Cu. Ft. Vapor/Gal. Liq.	36.45	30.65	31.79	27.41	27.67	24.38
Critical Conditions						
Temperature—°C	96.8	134.0	152.0	187.8	197.2	234.8
Temperature—°F	206.2	273.2	305.6	370.0	387.0	454.6
Pressure-Lb./Sq. in. Abs.	617	530	551	482	485	434
Explosion Limits—% in Air						
Lower	2.0-2.4	1.80	1.5-1.9	1.32	0.3-2.5	1.1-1.3
Upper	7.0-9.5	8.44	5.7-8.5	—	4.5-7.5	4.2-6.0
Heat of Vaporiz. 14.696 Lbs./sq. in. Abs.						
B.T.U./Lb. at B.P.	183	158	166	146	153	146
Specific Heat						
14.696 Lbs./sq. in. Abs.						
C_p Vapor B.T.U./Lb.°F	0.390	0.406	0.396	0.413	0.402	0.406
C_v Vapor B.T.U./Lb.°F	0.346	0.373	0.363	0.387	0.376	0.384
$N=C_p/C_v$ B.T.U./Lb.°F	1.128	1.088	1.090	1.066	1.070	1.057
C_p Liquid B.T.U./Lb. °F	—		0.55 at 32		0.55	0.536
Vapor Pressure						
at 100 °F, Lb./sq. in. Abs.	189.5	73.5	52.0	20.3	15.5	5.0
Refractive Index N_D^{20C}	—	—	—	1.3540	1.3577	1.3750

*** Based on "perfect gas."

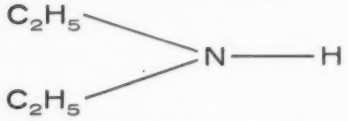


ETHYLAMINE



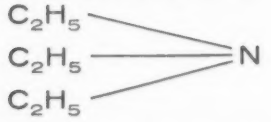
Its many uses include the production of amides, amine salts of sulfonates, modified urea formaldehyde resins and the preparation of salts where improved solubility is desired.

DIETHYLAMINE



Among its varied uses are the manufacture of agricultural chemicals, emulsifiers, pharmaceuticals, amides, vulcanization accelerators, dyestuffs, surface-active agents.

TRIETHYLAMINE



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ture gives 59.5 psig both at 70° F.

Curves showing the change in liquid density with temperature (3) are shown in Figure 3. These data are useful in the calculation of filling volume and head space. The density of hydrocarbons is only about one-third that of dichlorodifluoromethane so a given weight of the hydrocarbon propellant will occupy nearly three times as much space as the same weight of dichlorodifluoromethane. The amount of propellant needed has generally been figured on the weight basis regardless of the density.

Figure 4 (3) shows the variation of surface tension with temperature. A low value aids dispersion because less energy is required to separate the particles. Compared with water, the surface tension of hydrocarbons is very low.

Questions often arise concerning the solubility of the hydrocarbons in water and water in hydrocarbons. Either way the solubility is very low, but it could have some influence on the performance of a finished formulation. These data are presented in Figures 5 (3) and 6 (5).

At ordinary temperatures these hydrocarbons are stable and no corrosive substances are likely to be formed. They are relatively poor solvents so should give no difficulty with coatings or plastic parts. Any material that will withstand such active solvents as methylene chloride will generally be unaffected by hydrocarbons. The solvent action is quite similar to dichlorodifluoromethane.

The toxicity of these hydrocarbon propellants is reported to be low. The following quotation from a book on industrial hazards by Jacobs (6) gives a good summary of the physiological effect of these hydrocarbons.

> "Ethane, propane and butane are not poisonous gases. They are anesthetic in action. They belong to that group of gases and vapors which do not appear to produce injury in concentrations up to 5 per cent by

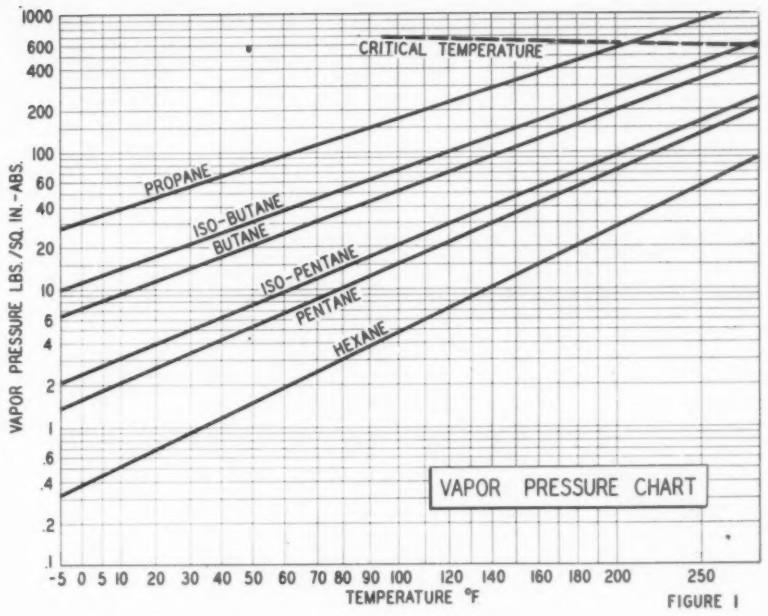


FIGURE 1

Figure 1 (above); Figure 2 (below)

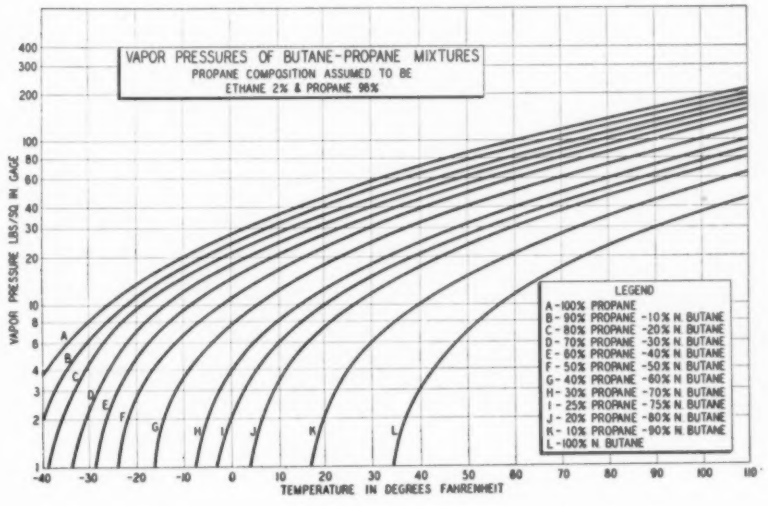
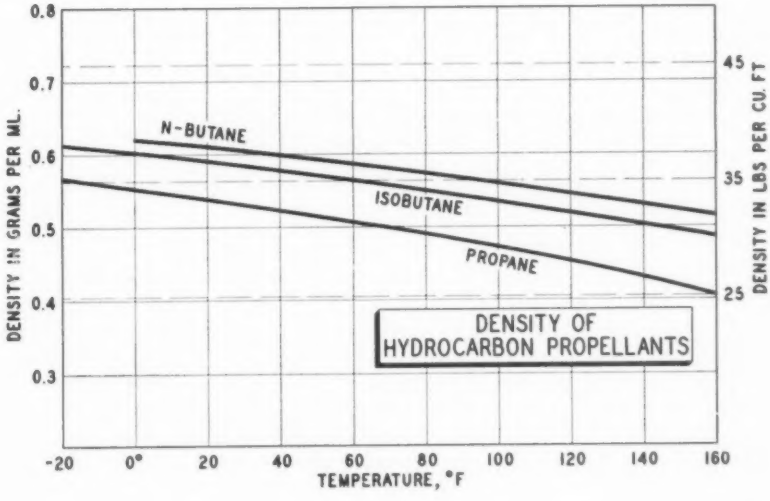


Figure 3



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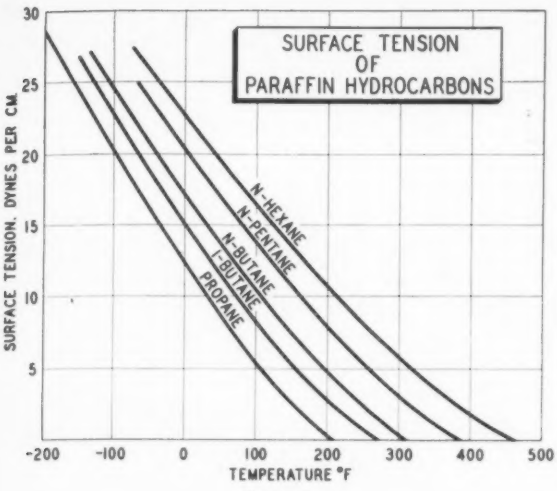


Figure 4

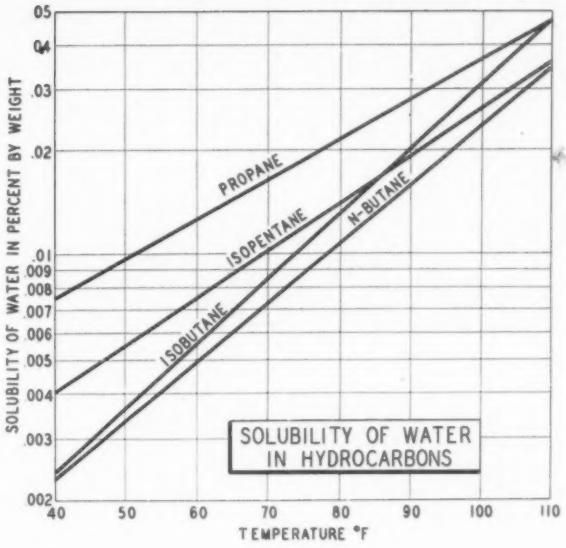


Figure 5

volume for durations of exposure of 2 hours. White rats subjected to an atmosphere containing 6.3 per cent by volume of propane, without a deficiency of oxygen, became slightly drowsy. An atmosphere containing 37.5 - 51.7 per cent of propane inhaled for 2 hours by the rats produced muscular weakness and mild anesthesia."

Later work by Di Prisco and Longo (7) show similar effects with a mixture of butane and propane.

Safety Consideration

THE hydrocarbons are highly flammable (Table I lists the explosive limits) and adequate precautions must be taken to insure against this hazard. The burden of this responsibility will naturally fall on the filling plant, as it will carry the flammable propellant in its storage tanks and loading systems. However, the widespread use of the liquefied petroleum gases in industrial and home "bottled gas" applications confirms that these hydrocarbons can be stored and dispensed safely, provided the hazards are recognized and duly respected.

Recommended safe practices with respect to certain handling and storage procedures are contained in the National Fire Protection Association Pamphlet No. 58 (8). These NFPA standards are today either adopted in full or used

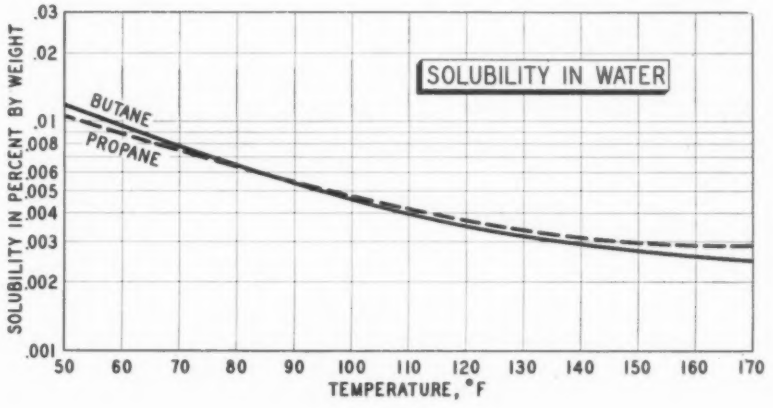
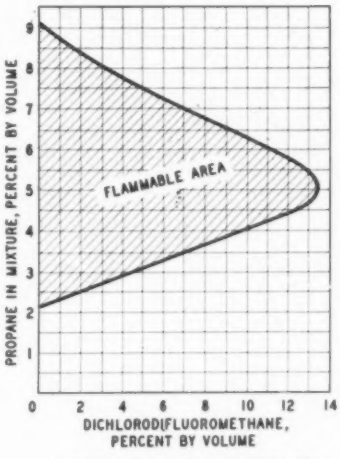
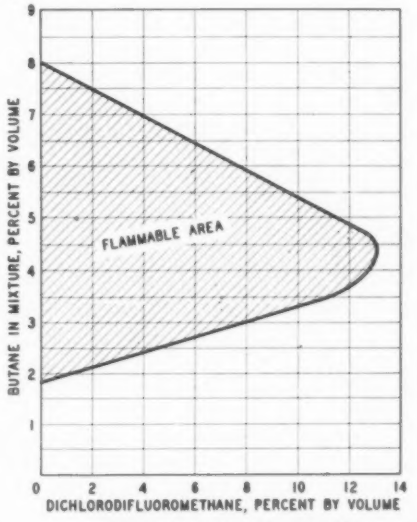


Figure 6

Figure 7



LIMITS OF FLAMMABILITY OF PROPANE IN MIXTURES OF AIR AND DICHLORODIFLUOROMETHANE



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in reference by a majority of the 48 states and are followed by practically the entire liquefied petroleum gas industry. Qualified specialists in LP gas installations are available in most areas for consultant and engineering services.

Electrical equipment demands special attention. Considerable information on this subject is available in the Crouse-Hinds Company Bulletin (9) "Condulets for Hazardous Locations," which contains Article 500 of the 1951 National Electrical Code and Crouse-Hinds' comments. Safety instruments are available to ascertain if hazardous conditions exist. The M-S-A Explosimeter manufactured by Mine Safety Appliances Co. (Pittsburgh, Pa.) shows by a direct meter reading whether combustible gases are present in concentrations approaching the explosive range.

Considerable additional information on safety requirements is generally available from local regulatory bodies. Requirements vary from city to city, as well as between States, and local authorities must be consulted to determine what regulations apply in the area in question. A hydrocarbon propellant storage and handling system must conform to State regulations governing LP gas installations and to the standards contained in NFPA Pamphlet No. 58.

The Interstate Commerce Commission regulations governing the shipping of various hazardous articles are contained in (12) Tariff No. 9, including supplements Nos. 4, 7, 8, 9 and 10, the last of which was issued January 16, 1957. Aerosols formulated with LP gas propellants will fall in the compressed gas classification. The applicable requirements depend on the vapor pressure and degree of flammability. The pertinent regulations are summarized in clarified terms in Aerosol Age, January, 1957, page 25. The ICC regulations pertain only to the requirements for safe packing and handling during transportation and are not concerned with the safety factors which may be involved in the ultimate use of the finished product.

Safety of the finished product as used in the home is, of course, the final acceptance test. Reports of experimental work and actual commercial production and distribution indicate that non-flammable aerosols can be formulated with hydrocarbon propellants.

The formulations given in this paper are presented as general information for illustrative purposes only. Commercial feasibility may depend on various factors affecting the development and sale of such a product including possible patent infringement. Several of these are taken from "The Aerosol Story" by Dodge and Olcott, Inc. (10).

Jones and Scott (1) found that 23.8 per cent by volume (9 per cent by weight) of dichlorodifluoromethane could be substi-

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tuted by a butane-propane mixture before the flammable region was reached (See charts in Figure 7). The short supply of propellant during the War prompted this work, but very little use has been made of such a mixture. A typical formula could contain the following ingredients:

	Per Cent
Pyrethrins	0.4
Methoxychlor	2.0
Petroleum Oil	12.6
Dichlorodifluoromethane	76.0
Propane-butane mixture	9.0

The first commercially produced low pressure aerosol (11) was the "JET" formula of Airosol, Inc., which employed pentane up to a point just below flammability as part of the propellant. This historic formula is as follows:

	Per Cent
Pyrethrum (20%)	0.5
Piperonyl butoxide	1.0
DDT	2.0
Chlordane	1.0
Soltrol* 130	5.5
n-Pentane	12.0
Trichloromonofluoromethane	39.0
Dichlorodifluoromethane	39.0
	100.0

Formulations that contain large amounts of water and relatively small amounts of propellant are well adapted to the use of hydrocarbon propellants. Shave cream, vanishing cream, cold cream, hair conditioner, hand cleaner, shampoos, and rug cleaners belong to the foam-producing type where some of the propellant is dissolved in the dispersed phase. The following formulas are typical of this class (10).

Shave Cream

Concentrate	Per Cent
Stearic Acid	10.5
Polyoxyalkylene lanolin	0.5
Ceranol	2.0
Mineral Oil	1.0
Petrolatum	7.0
Propylene glycol	3.0
Span 60	2.0
Tween 60	1.0
Triethanolamine	1.0
Triethanolamine lauryl sulfate	4.0
Distilled water	67.9
Methyl Parasept	0.1
	100.0
Above Concentrate	92 per cent
Propellant (Hydrocarbon)	8 per cent

* Trade Mark Phillips Petroleum Company.

Aerated Vanishing Cream

Concentrate	Per Cent
Cetyl alcohol	0.4
Mineral Oil	1.0
Polyoxalkylene lanolins	1.0
Stearic acid	2.0
Glyceryl monostearate	4.0
Tergosept P	0.1
Sodium lauryl sulfate	1.0
Sorbitol	3.5
Distilled water	87.0
	100.0
Above Concentrate	92 per cent
Propellant (Hydrocarbon)	8 per cent

Hair Conditioner

Concentrate	Per Cent
Lanolin oil	2.50
Polyoxyalkylene lanolins	2.50
Petrolatum	2.25
Ceramol	2.50
Mineral Oil	12.50
White beeswax	1.00
Borax	0.25
Methyl Parasept	0.05
Distilled Water	76.45
	100.00
Above Concentrate	90 per cent
Propellant (Hydrocarbon)	10 per cent

Hand Cleaner — Waterless

Concentrate	Per Cent
Triethanolamine	2.40
Oleic acid	9.70
Monoethanolamine	1.00
Tergitol #4	2.00
Liquid lanolin fraction	0.80
Propylene glycol	4.00
Deo Base	12.20
Distilled water	67.90
	100.00
Above Concentrate	90 per cent
Propellant (Hydrocarbon)	10 per cent

Shampoo

Concentrate	Per Cent
Sarkosyl NL-30	33.0
Alrosol "C"	3.0
Sodium lauryl sulfate	5.0
Oleyl alcohol	1.0
Triethanolamine lauryl sulfate	5.0
Distilled water	53.0
	100.0
Above Concentrate	90 per cent
Propellant (Hydrocarbon)	10 per cent

Nonfoaming emulsion types of formulations or formulations that produce unstable foam such as window cleaners are adaptable to the use of hydrocarbons. Several other known formulations could be added but these are enough to show these gases are practical. With the excellent containers and valves available today, many other new formulations and methods of using hydrocarbons will no doubt be developed. A considerable increase in the use of these less expensive propellants is expected.

Summary

MOSTLY because of recent developments in aerosol packaging, the requirements have changed so that practical use is now being made of hydrocarbon propellants. This paper contains a compilation of physical data on the lower boiling hydrocarbons with vapor pressures in the range most practical for use in pressurized packages. Propane, butane and isobutane are included as propellants and some data are given on pentane and hexane which can sometimes be used as diluents. Charts are presented showing the variation with temperature of vapor pressure, density, surface tension, solubility in water, solubility of water in hydrocarbons and flammability limits. The safe use of these propellants in the filling plant and in the finished product is discussed. Typical formulations are included.

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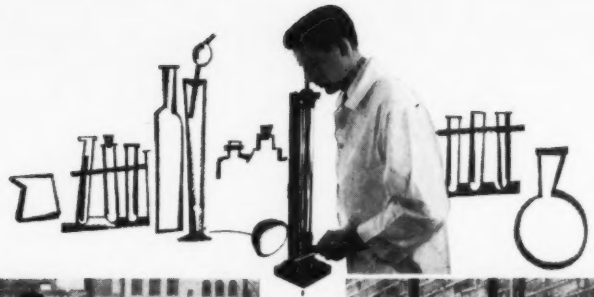
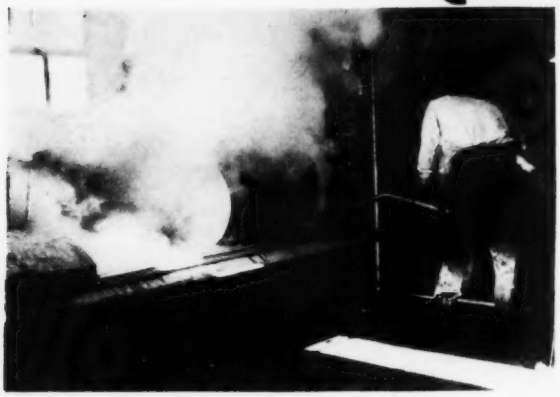


Samples for quality, clarity and color are taken, and sent to the laboratory prior to unloading any tank or transport.

Separate lines for each product eliminates any contamination.

QUALITY



***Drums** are washed in a boiling caustic bath, rinsed then air-blown to assure a dry container.*

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NEW INSECT REPELLENT

By I. H. Gilbert, H. K. Gouck and Carroll N. Smith*

Entomology Research Division
Agricultural Research Service
U. S. Dept. of Agriculture

Diethyltoluamide, synthesized at the Beltsville, Md., laboratory of U.S.D.A. has been found to be outstanding in protection time tests against the yellow fever and black salt-marsh mosquitoes.

INVESTIGATIONS are conducted at the Orlando, Fla., laboratory to develop a chemical that will protect man from insects more efficiently than the repellents in current use. Of the thousands of chemicals that have been tested in the last five years by the standard screening procedure (King *7*), several of those synthesized at the Beltsville, Md., laboratory (McCabe *et al. 8*) have been outstanding. *N, N* Diethyl-*m*-toluamide and *o*-ethoxy-*N,N*-diethylbenzamide were found to be superior or equal to the standard repellents for skin application against five species of mosquitoes in Florida (Gilbert *et al. 4*). *N,N*-Diethyl-*m*-toluamide was superior to the standard repellents against mosquitoes in Alaska (Altman and Smith *1*) and in Panama (Gilbert and Gouck *3*). In studies in Oregon Gilbert (*2*) found diethyltoluamide to be the most effective of 12 individual repellents tested against mosquitoes breeding in water from melting snow and irrigation water. It was also slightly more effective than M-2020, the standard Army repellent, against the deer fly *Chrysops discalis* Will. Gouck and Gilbert (*5*) showed diethyltoluamide and *o*-ethoxy-*N,N*-diethylbenzamide to be highly effective as clothing impregnants in repelling ticks for three weeks.

This paper reports the studies conducted in the last two years with diethyltoluamide, alone and in mixtures with *o*-ethoxy-*N,N*-diethylbenzamide, ethyl hexanediol, and other chemicals. The repellents used as skin applications were tested in the laboratory against the yellow-fever mosquito (*Aedes aegypti* (L.)), the malaria mosquito (*Anopheles quadrimaculatus* Say), and the stable fly (*Stomoxys calcitrans* (L.)), and in the field against the salt-marsh mosquitoes *Aedes taeniorhynchus* (Wied.) (predominant species) and *sollicitans* (Wlkr.), *Mansonia perturbans* (Wlkr.), the sand fly *Culicoides canithorax* (Hoff.), and the deer fly *Chrysops atlantica* (Pech.). The clothing impregnants were tested in the laboratory against *A. aegypti* and the oriental rat flea (*Xenopsylla cheopis* (Rothsch.)), and in the field against salt-marsh mosquitoes, the lone star tick (*Amblyomma americanum* (L.)), and the chigger *Trombicula splendens* (Ewing).

* Nelson Smith, R. L. Fye, R. A. Sutton, S. R. Pratt, R. H. Ford, and D. W. Meifert took part in the testing.

Materials

THE individual repellents tested were *o*-ethoxy-*N,N*-diethylbenzamide, *N,N*-diethyl-*o*-toluamide, ethyl hexanediol, and technical diethyltoluamide, which contained about 70% of meta, 27% of para, and 3% of ortho isomers of *N,N*-diethyltoluamide.

The mixtures were:

Standard Repellents

M-250 Dimethyl phthalate (60%), ethyl hexanediol (20%), and Indalone (20%); used as standard in tests against *Anopheles quadrimaculatus.*

M-1960 *N*-Butylacetanilide (30%), 2-butyl-2-ethyl-1, 3-propanediol (30%), benzyl benzoate (30%), and Tween 80 (10%); standard military clothing repellent.

M-2020 Dimethyl phthalate (40%), dimethyl carbate (30%), ethyl hexanediol (30%); standard military skin repellent.

Experimental Repellents

M-2084 Diethyltoluamide (50%), *o*-ethoxy-*N*,*N*-diethylbenzamide (50%).

M-2085 Diethyltoluamide (33.3%), *o*-ethoxy-*N*,*N*-diethylbenzamide (33.3%), ethyl hexanediol (33.3%).

M-2089 Diethyltoluamide (80%), acetate of *o*-phenylphenol (20%).

M-2091 Diethyltoluamide (72%), benzl benzoate (18%); clothing treatment only.

M-2092 Diethyltoluamide (50%), ethyl hexanediol (50%).

M-2108 Diethyltoluamide (75%), *N*,*N*-diethyl-*o*-toluamide (25%).

M-2109 Diethyltoluamide (50%), *N*,*N*-diethyl-*o*-toluamide (50%).

M-2110 Diethyltoluamide (25%), *N*,*N*-diethyl-*o*-toluamide (75%).

Skin Applications

SOME tests were run with full-strength repellents and others at reduced concentrations with ethanol as the diluent. In most tests one ml. of the repellent was spread evenly over the forearm of the subject and compared directly with another repellent on the other arm.

Protection-time tests: In the laboratory each arm was exposed to caged mosquitoes for three minutes at approximately 30-minute intervals. In the field the treated arms were exposed continuously to natural infestations. In most experiments effectiveness was based on complete protection – that is, the time between treatment and the first confirmed bite (a bite followed by another within 30 minutes).

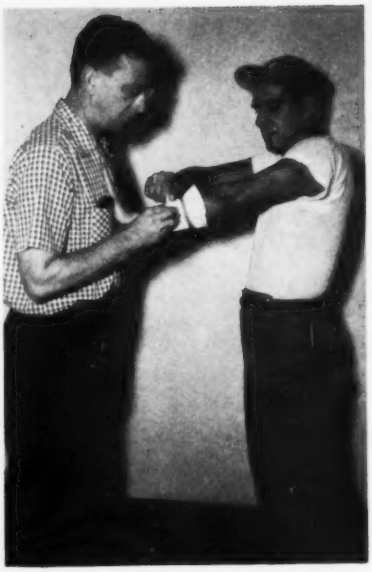

Figure 1. — Mosquito repellent wiping test.

Wiping tests: To determine the amount of wiping repellent-treated arms could withstand before receiving mosquito bites, the following technique was used: A folded wiping tissue was placed around the treated arm above the elbow and held close to the skin with an elastic band as it was pulled down and up over the treated forearm. The size of the band was adjusted according to the circumference of the subject's forearm, so that the pressure on all arms would be about the same. A single wipe constituted grasping the tissue and drawing it up or down over the treated arm (Fig. 1). Preliminary tests were run to determine the minimum number of wipes each repellent would withstand.

In the laboratory tests, beginning 10 minutes after treatment, the subject exposed the treated arms for three minutes in each of three cages of mosquitoes. If the arm did not receive an average of two bites per cage, it was wiped the minimum number of times selected for the particular repellent and tested again after 10 minutes. If less than two bites were received, the arm was subjected to an additional wipe and retested, and this procedure was continued until an average of two bites per cage was received in the three cages. The wiping procedure was the same in the field, but the time of exposure to the mosquitoes was 10 minutes between successive wipes. The procedure was continued until two bites were received in one 10-minute period. No tissue was used for more than 10 wipes.

Figure 2. — Equipment for rinse test in operation.

Rinsing tests: To ascertain the amount of rinsing treated arms could withstand before receiving mosquito bites, the following technique was used: The rinsing equipment consisted of two cylindrical galvanized-iron tanks, each 7¼ inches in diameter and 19 inches high (Fig. 2). Water entered each tank through a rubber hose connected to the center of the bottom, and was carried off through a hose connected to the side two inches from the top. The intake hoses were connected to a Y-fitting, which was connected to the water main by a hose. The amount of water delivered to the Y was controlled by a metal disk with a 11/32-inch orifice inserted in the main hose. Disks with 7/32-inch orifices were in the hoses connecting the Y with the tanks. The rate of flow through

the tanks was 3.82 to 3.86 gallons per minute.

Beginning a half-hour after treatment, the subjects exposed their treated arms for three minutes in each of two cages of mosquitoes. If an arm did not receive an average of two bites per cage, it was rinsed by immersion (an arm in each tank) in the flowing water for five seconds, air-dried for 15 minutes, and then tested again. This procedure was repeated until an average of two bites was received.

Experimental design: A balanced, incomplete-block design was employed in all experiments except those with a range of dosages. With this design each repellent was paired against each other repellent on the opposite arms of subjects. An adjusted average, which compensates for variation between hosts and testing conditions, was computed by a statistical method suggested by J. U. McGuire (Kempthorn *6*). From the analysis of variance the least significant difference (five per cent level) between any two repellents was determined. The relative effectiveness of the experimental repellent to that of a standard was expressed as the ratio of the protection time, the number of wipes withstood, or the number of rinses withstood. The ratio is a more reliable index than the actual protection time, which varies greatly between hosts and different populations of mosquitoes.

Tests with Aedes aegypi and taeniorhynchus: The protection periods of two individual repellents and four mixtures were compared with M-2020 and ethyl hexanediol as standards. The results of the tests are presented in Table 1. Again both *aegypti* and *taeniorhynchus* diethyltoluamide was the most effective repellent tested, and the mixtures were about as effective as would be expected on the basis of the amount of each ingredient and its individual effectiveness. Against *aegypti* the mixtures were from 2.5 to 1.8 times as effec-

(*Turn to Page* 129)

Table 1

Results of protection-time tests with repellents as skin applications against Aedes aegypti (14 tests) and taeniorhynchus (7 tests).

Repellent	Per Cent Concentration	Protection time (hours) against		Ratio to M-2020	
		aegypti	taeniorhynchus	aegypti	taeniorhynchus
o-Ethoxy-*N*,*N*-diethylbenzamide	50	3.50	5.75	1.25	2.68
	100	6.05	7.92	.99	1.60
Diethyltoluamide	50	6.78	6.02	2.43	2.80
	100	13.10	9.39	2.13	1.89
M-2084	50	5.78	5.98	2.06	2.78
	100	11.15	8.63	1.81	1.74
M-2085	50	5.19	5.63	1.86	2.62
	100	11.23	9.12	1.83	1.84
M-2089	50	6.02	5.92	2.15	2.75
	100	11.43	8.56	1.86	1.72
M-2092	50	5.70	5.23	2.04	2.44
	100	11.92	8.55	1.94	1.72
Standards:					
Ethyl hexanediol	50	2.36	4.42	.84	2.05
	100	4.86	5.81	.79	1.17
M-2020	50	2.79	2.15	1.00	1.00
	100	6.15	4.97	1.00	1.00
LSD (5 per cent)	50	.60	.76	....	....
	100	.78	.74	....	....

Table 2

Results of paired tests with diethyltoluamide or M-2092 and M-2020 as skin applications against Aedes aegypti and taeniorhynchus (3 tests).

Paired repellents	Per Cent Concentration	Volume (milliliters)	Protection time (hours) against		Ratio to M-2020	
			aegypti	taeniorhynchus	aegypti	taeniorhynchus
First Series						
M-2020	50	1.0	2.00	2.38	....	....
Diethyltoluamide	50	1.0	6.98	5.77	3.49	2.42
M-2020	50	1.0	2.88	3.25	....	....
M-2092	50	1.0	6.25	5.85	2.17	1.80
Second Series						
M-2020	100	1.0	5.92	5.43	....	....
Diethyltoluamide	50	1.0	7.80	6.55	1.32	1.21
M-2020	100	1.0	5.22	5.77	....	....
M-2092	50	1.0	6.88	7.03	1.32	1.22
Third Series						
M-2020	100	1.0	6.52	5.40	....	....
Diethyltoluamide	100	0.5	7.87	6.52	1.21	1.21
M-2020	100	1.0	5.63	5.67	....	....
M-2092	100	0.5	6.60	6.00	1.17	1.06
Fourth Series						
M-2020	100	1.0	6.00	5.47	....	....
Diethyltoluamide	100	1.0	13.18	10.23	2.20	1.87
M-2020	100	1.0	6.38	5.85	....	....
M-2092	100	1.0	12.15	8.62	1.90	1.47

Table 3

Relative effectiveness against Aedes aegypti of repellents as skin applications under sweating and normal conditions (12 tests).

Repellent	Per Cent concentration	Protection time (hours)		Ratio to M-2020		Ratio of sweating to normal
		Normal	Sweating	Normal	Sweating	
o-Ethoxy-*N*,*N*-diethylbenzamide	50	3.85	1.43	1.45	1.08	0.37
	100	5.95	1.88	.96	1.06	.32
Diethyltoluamide	50	6.61	2.31	2.48	1.74	.35
	100	13.06	3.63	2.10	2.04	.28
M-2084	50	5.66	2.05	2.12	1.54	.36
	100	11.20	3.03	1.80	1.70	.27
M-2085	50	5.21	2.17	1.95	1.63	.41
	100	11.20	2.76	1.80	1.55	.23
M-2092	50	5.26	2.17	1.97	1.63	.41
	100	11.87	3.19	1.91	1.79	.27
Standards:						
Ethyl hexanediol	50	2.23	1.52	.84	1.14	.68
	100	4.76	1.75	.77	.98	.36
M-2020	50	2.67	1.33	1.00	1.00	.50
	100	6.23	1.78	1.00	1.00	.29
LSD (5 per cent)	50	.60	.32	....	....	....
	100	.90	.44	....	....	....

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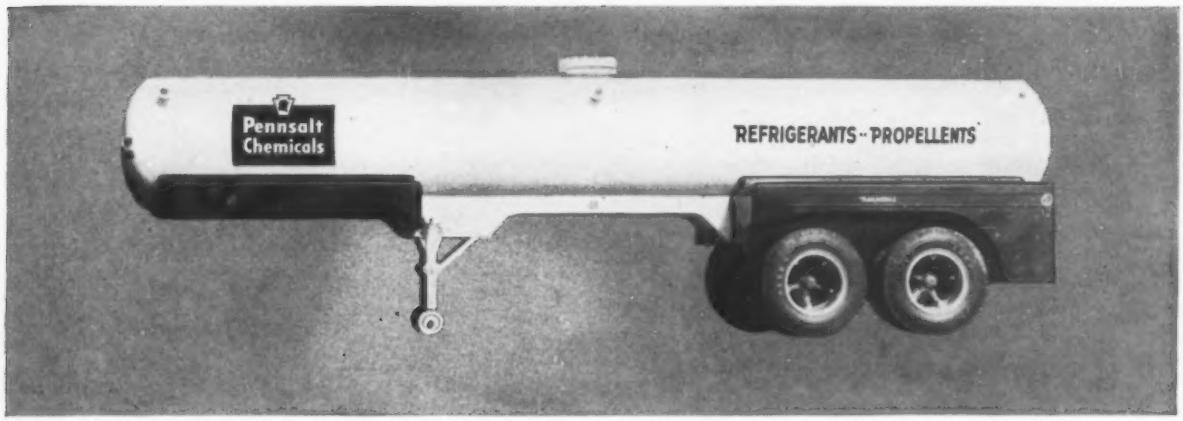

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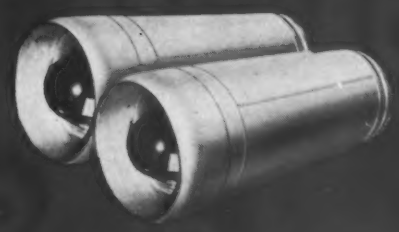

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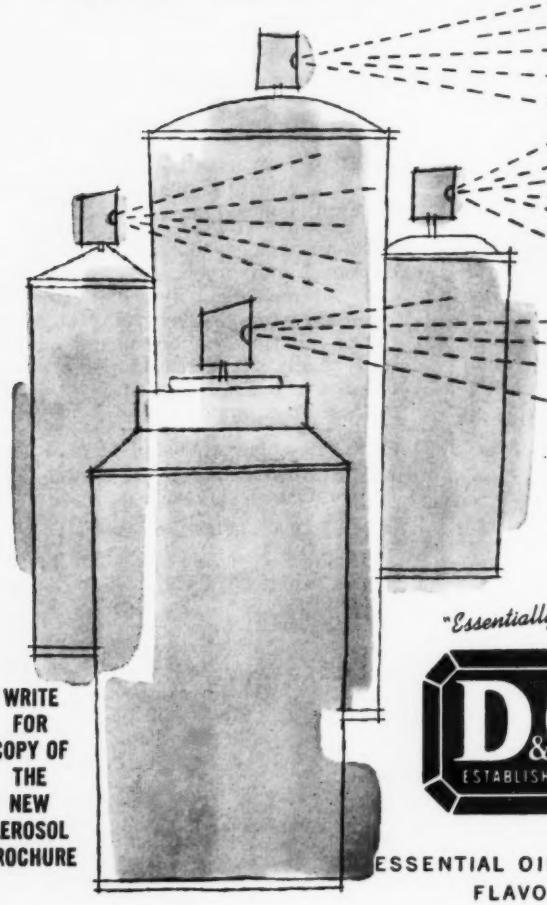

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"The consumer's viewpoint" on

FLOOR FINISHES

By William H. Joy*,
American Telephone and Telegraph Co.,
New York

THREE floor dressings are currently recommended for Bell Telephone Company use. These are: (1) our old standby "Liquid Floor Wax," a high carnauba-shellac combination that has been giving us maximum appearance and durability for years, (2) "Floor Wax W-8," our "Ludox" wax which is used where additional slip resistance is needed, and (3) "Anti-Slip Floor Finish," a resin polymer emulsion that contains no wax.

All told, these floor dressings add up to a volume of about 200,000 gallons a year, broken down roughly as follows: Liquid Floor Wax, 30 percent; Floor Wax W-8, 40 percent; and Anti-Slip Floor Finish, 30 percent.

This broad range permits the building operating staff to select, on a local basis, the dressing most suitable for their needs. Bell System Practices suggest the most suitable fields of use but do not lay down any hard and fast ground rules. In addition to appearance, service life and slip resistance, factors to be considered include the type of flooring, type of occupancy, geographical location and past experience. For example, "Liquid Floor Wax" is used in general office space and equipment areas, particularly for linoleum, rubber and vinyl floor coverings. In operating rooms, locker rooms, business offices, cafeterias and other locations that are heavily trafficked by women or the general public, either Floor Wax W-8 or Anti-Slip Floor Finish is preferred. This is particularly true where the flooring is asphalt tile or vinyl asbestos tile. Since climatic conditions affect both soil resistance and slip resistance, it is obvious that a different product will be favored in Denver than in Miami. However, due to company policy, area preference or past experience with a given product, regular wax will be found in business offices and operating rooms and "Anti-Slip Floor Finish" in apparatus space. One building man may prefer the high gloss and long service life of regular wax and feel that buffing the floor is well justified. Another may like the more satin finish of the resin emulsion and the tendency to show fewer scuff and black heel marks. One company, looking at floor maintenance from the viewpoint of maximum safety, has banned all dressings except "Anti-Slip Floor Finish." Another has chosen "Floor Wax W-8" as its sole standard. Recently, I saw a business office in one of the larger cities where a black marbelized rubber floor had been maintained for many years with regular floor wax. Slips and falls had been conspicuous by their absence. Even though dressings providing greater slip resistance were now available, the local people saw no reason to change their maintenance procedures. When we look beneath the surface, this apparent confusion is not confusion at all, but actually good common sense. Since floor maintenance coatings represent a balance, the building man selects the finish that has the most plusses in the properties he is seeking. In our opinion the universal wax has yet to come.

"Ludox" Wax

OUR latest and most popular wax is the "Ludox" formulation which we call "W-8" after the specification number. Although less than two years old, it has zoomed into first place with an annual volume of about 80,000 gallons. This popularity is not hard to understand. There has always been a demand, particularly by our traffic department, which employs many women, for a non-slip floor finish providing additional safety under foot. Before the advent of "W-8" we had a special floor wax where the slip resistance was achieved by the use of a low carnauba formulation containing a small proportion of synthetic resins. While a good wax in its day, it tended to black-mark, lose slip resistance on aging and provided a comparatively short service life. The "Ludox" wax was free from these defects. Also, most important, while the "Ludox" wax was

* Paper presented at 43rd annual meeting, Chemical Specialties Manufacturers Assn., Washington, D. C., Dec. 4, 1956.

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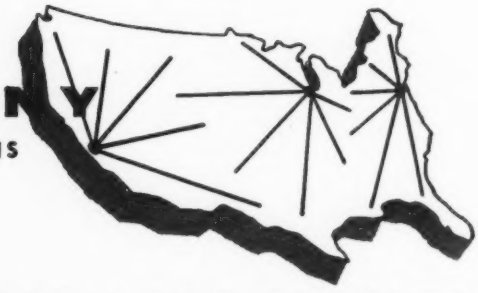

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less slip resistant by laboratory evaluation, in actual floor performance it established a considerably better safety record. Furthermore, its introduction was most timely since many areas were suffering with the trials and tribulations of the earlier resin finishes. The "Ludox" wax was much less temperamental. It offered an easy middle of the road answer to the slip problem.

Resin Emulsions

THE Bell System was one of the pioneers in the use of resin emulsions. Back in 1948 we used, on a limited scale, a product that had little to recommend it except its exceedingly high slip resistance. In those early days we repeatedly brought the question of improved resin finishes to the attention of wax manufacturers and feel that in some small way our interest stimulated their development. In 1952 we introduced "Anti-Slip Floor Finish" to the Bell Telephone Companies and soon found we had a bull by the tail. The coating had a tendency to be fast when contaminated by wax residues and to scratch and powder excessively under foot traffic when a proper bond had not been achieved between the finish and the floor. Results in the same area, or even the same building, were quite variable. The product was blamed whereas actually the difficulties were due to a lack of "know-how" in application. The adoption of a liquid floor cleaner containing ammonia as a companion item insured a properly cleaned floor and helped considerably in straightening out these difficulties. Within the last year or so, "Anti-Slip Floor Finish" has been improved by blending some of the newer plastic polymers into the emulsion. These current formulations have little tendency to scratch or powder and seem to be more foolproof from the viewpoint of application. While this has been achieved at the expense of slip resistance, the difference does not appear to be significant from the practical viewpoint.

Wax vs. Resins

WE have often been asked to compare wax and resin coatings from the viewpoint of appearance, service life and maintenance costs. This is difficult due to the many factors involved, such as the location of the floor, the color, pattern and nature of the tile or linoleum, and density of the traffic and the type of dirt under foot. Possibly the most important elements are the standard of appearance that must be maintained and the point at which it is decided the floor must be reconditioned. To a considerable extent the latter depends on the taste and judgment of the building man responsible for the floor. Costs can go either way depending on these considerations. In general, our experience would indicate the following merits and demerits in comparing resin finishes with wax:

Advantages—Greater slip resistance, both dry and wet, hence safer floors. Less tendency to black mark. Greater resistance to damp mopping. Elimination of the polishing operation. Best all around performance on asphalt tile and vinyl asbestos tile floors.

Disadvantages—Need for greater care in floor preparation. Poorer appearance if waxed floors are buffed. More difficult to remove. More tendency to sink into linoleum if at all porous, so that on older floors more coats may be required to produce an acceptable job.

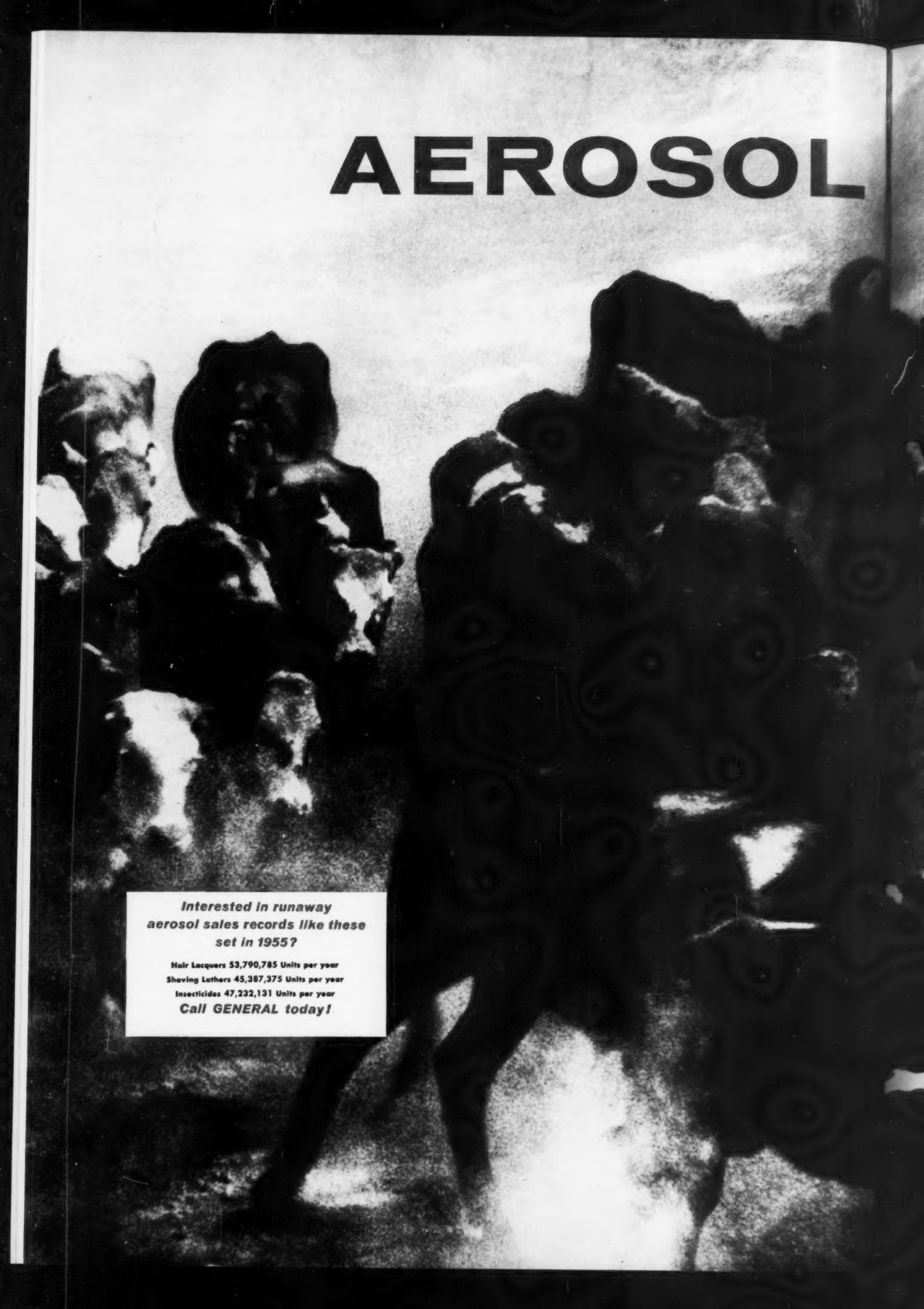
While our experience with vinyl asbestos tile floors has been somewhat limited, it has shown that there is a need for a surface dressing to protect the floor from wear and to reduce maintenance costs. Some of this has been learned the hard way. Having purchased the goods with the thought that waxing was unnecessary, as indicated by manufacturers' advertising claims, there has naturally been a reluctance on the part of management to wax it. In a recent case on a heavily trafficked area right off the street, the use of our resin emulsion cut maintenance costs to one third what they had been when the floor was maintained by nightly mopping. Manufacturers of these floorings should also consider the use of factory finishes more compatible with maintenance products. A common complaint on new floors is that the wax will not "lay-down" properly due to its inability to wet the floor. In another recent case, so much silicone mold release compound had been left on the tile that a very slippery floor resulted. To correct this condition, it was necessary to give the floor a severe scrubbing with scouring powder, a procedure which would hardly seem desirable on a new floor.

Specifications and Tests

ALL of these dressings are purchased on technical specifications. In addition to the usual laboratory requirements, the two wax specifications contain composition requirements covering the amount of carnauba, shellac and colloidal silica. While we have been criticized for this by the wax manufacturers, we have found that this approach enables us to get legitimate competition without depreciating quality. Also, waxes from different sources tend to be much more alike which facilitates changes in the field. To illustrate what we are attempting to avoid, let me quote the following paragraph from the November 3 issue of *Chemical Week:* "Many floor finish makers look for the kind of flexibility that will allow them to compare five or six formulations on a cost basis every few months and switch into production of the one that comes out cheapest."

All laboratory findings are backed up by field testing, generally in several locations, before changing sources of supply. In the case of new developments the field trials

(*Turn to Page* 127)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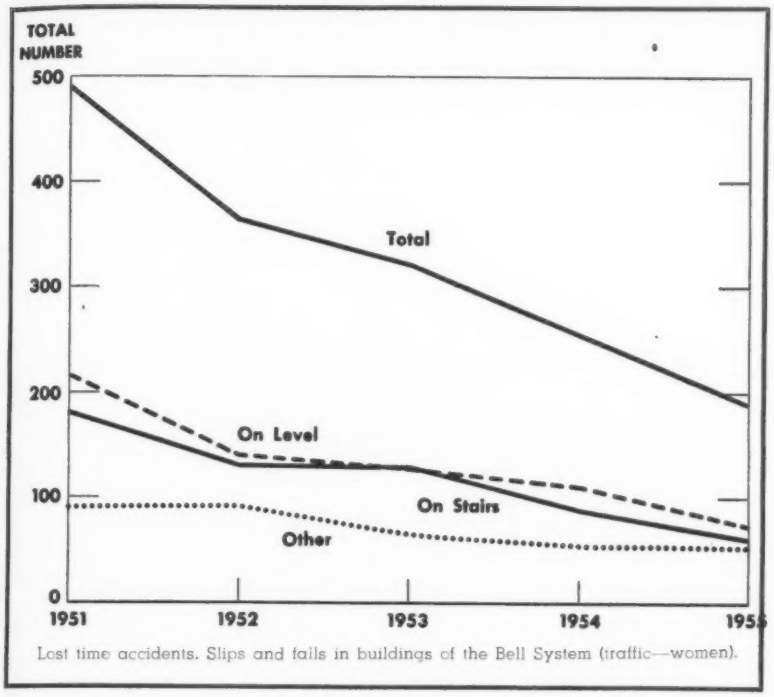

Lost time accidents. Slips and falls in buildings of the Bell System (traffic—women).

can be quite extensive and prolonged. For example, in the case of W-8, our "Ludox" wax, it was used by three companies on a full scale basis for well over a year before it was made a Bell System standard. While this program may, at times, appear painfully slow to prospective suppliers, it pays to be sure since in the long run it keeps us out of trouble.

Suppliers' Part

WHAT do we expect from our suppliers? In the first place we expect them to meet not only the letter but also the spirit of the specifications. We expect them not to make any changes in formulation during the course of the contract unless our approval is first obtained. We expect prompt and efficient attention to our orders. We expect a limited amount of field service in the event of floor difficulties. We expect a certain amount of technical assistance on specifications, testing procedures, and product application. Finally, we expect to be kept posted on new developments in the field in question.

Manufacturers who have items which they feel are new and of interest to the Bell Telephone Companies should adopt the technical approach. The salesman who knows nothing about the composition of his product is not going to convince us that we should make any floor tests. They cost money. We will tell you the type of product we are using. What we want to know is in what respects the competitive product is better and some plausible explanations as to why this should be so. We are not interested in mysterious ingredients or chemical doubletalk. Let us have the facts, or as many as you feel free to reveal.

In the Bell System there are more than 15,000 buildings containing over 100,000,000 square feet of resilient floorings on which over 600,000 employees walk daily. To strip and wax these floors costs, we estimate, some $3,000,000 annually, of which the materials used represent only a small fraction. In addition to printed instructions, training aids include motion pictures, training schools and on-the-job instruction. The importance of good floor finishes and efficient cleaning materials in this program is self-evident.

Safety Considerations

FINALLY, before closing let us take a look at safety. In the Bell System, safety in every phase of the job always comes first. In fact, our accidents, both in number and severity, are only about 10 percent what they are in general industry. That this policy has paid dividends in our floor maintenance program is shown by a steadily decreasing rate of slips and falls. For example, among women, traffic slips and falls on floors resulting in lost time accidents averaged .84 per thousand in 1951. In 1955 these had been decreased to .29 per thousand, a percentage reduction of 65 percent. The introduction of safer floor finishes during this period no doubt contributed to this improvement.

In analyzing these accidents, it is interesting to note that there are many contributing causes other than the floor dressing, including inclement weather, foreign objects on the floor, defective employee footwear and carelessness. In fact, in analyzing reports which are prepared by on-the-spot safety committees, the wax itself is blamed in only about 15 percent of the cases. In these instances the report almost invariably reads "freshly waxed floor." While areas being waxed are barricaded off during the operation and for some time thereafter, the wax film seems to retain moisture for an appreciable length of time after the floor has apparently dried. This retained moisture keeps the film soft and lowers the sheer resistance. Buffing the wax when initially applied is recommended since this not only improves appearance but also drives out this residual moisture and increases the slip resistance of the film.

During recent years we feel we have made significant progress in improving our standards and procedures. No little share of the credit for this improvement belongs to the Chemical Specialties Industry for which we should like to say "We thank you!"

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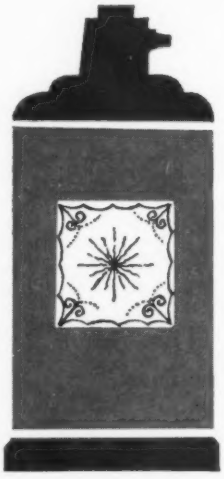

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tive as M-2020 and ethyl hexanediol, and the decreasing order of effectiveness was M-2092, M-2089, M-2084, and M-2085. *o*-Ethoxy-*N,N*-diethylbenzamide was 1 to 1.5 times as effective as these two standards. M-2020 was slightly better than ethyl hexanediol, but the difference was not significant. Against taeniorhynchus M-2092, M-2084, M-2085, M-2089, and *o*-ethoxy-*N,N*-diethylbenzamide gave protection periods 60 to 180 per cent longer than M-2020 and 20 to 57 per cent longer than ethyl hexanediol.

Diethyltoluamide and M-2092 were compared with M-2020 at varying dosages and concentrations to confirm the previous indications of their relative effectiveness. The results of four series of paired tests are presented in Table 2. Diethyltoluamide and M-2092 were 1.5 to 3.5 times as effective as M-2020 when compared at equal concentrations and volumes, and from 10 to 20 per cent more effective when used at half the strength or volume of M-2020.

Tests under normal and sweating conditions were run against *aegypti* in the laboratory and against *taeniorhynchus* in the field to compare the repellency of diethyltoluamide, *o*-ethoxy-*N,N*-diethylbenzamide, and three mixtures with M-2020 and ethyl hexanediol. In the laboratory the testing room was held at 82°F. and 75 per cent relative humidity, the waiting room for subjects under normal conditions at 80° and varying humidity, and the waiting room for the subjects under sweating conditions at 94° and a relative humidity of 84 per cent. In the field tests under normal conditions the subjects exposed their treated arms while sitting or walking in areas heavily populated with mosquitoes, and under sweating the subjects played baseball or volleyball in the sun for 30 minutes to induce sweating on the arms, which were then exposed in heavily infested areas for 10 minutes. Alternate exertion and exposure were repeated until the tests terminated. The results of the tests against *aegypti* are given in Table 3, and those against *taeniorhynchus* in Table 4. The ratios of the test repellents to the standard repellents remained in about the same relative order under both normal and sweating conditions. Against *aegypti* the ratios of the test repellents to M-2020 were lower under sweating than under normal conditions, but against *taeniorhynchus* the reverse was shown. The protection periods of all the repellents were shorter under sweating than under normal conditions. Against *taeniorhynchus* the time under sweating was 43 to 61 per cent of that under normal conditions; against *aegypti*, with full-strength repellents it was 23 to 36 per cent of that under normal conditions, and with half-strength repellent 35 to 68 per cent.

The results of wiping tests with the three individual repellents and five mixtures are presented in Table 5. Diethyltoluamide was the most resistant, withstanding 41 or more wipes. The mixtures retained their same relative effectiveness with regard to

Table 4

Relative effectiveness against Aedes taenirohynchus of repellents as skin applications under sweating and normal conditions (7 tests with 50 per cent ethanol solutions).

Repellent	Protection time (hours)		Ratio to M-2020		Ratio of sweating to normal
	Normal	Sweating	Normal	Sweating	
o-Ethoxy-*N,N*-diethylbenzamide	5.50	3.22	1.58	2.16	0.60
Diethyltoluamide	6.60	3.65	1.90	2.44	.55
M-2084	5.90	2.92	1.69	1.96	.49
M-2085	6.16	2.75	1.77	1.84	.45
M-2092	5.55	2.62	1.59	1.75	.47
Standards:					
Ethyl hexanediol	4.58	1.97	1.31	1.31	.43
M-2020	3.48	1.50	1.00	1.00	.43
LSD (5 per cent)	.69	.57	....	....	....

Table 5

Resistance to wiping of repellents as skin applications (5 tests).

Repellent	Number of wipes withstood		Ratio to M-2020	
	aegypti	taeniorhynchus	aegypti	taeniorhynchus
First Series				
o-Ethoxy-*N,N*-diethylbenzamide	2.17	25.51	0.23	1.83
Diethyltoluamide	52.99	41.76	5.55	3.00
Standards:				
Ethyl hexanediol	12.86	20.98	1.35	1.51
M-2020	9.55	13.91	1.00	1.00
LSD (5 per cent)	1.65	2.68	....	....
Second Series				
Diethyltoluamide	42.23	40.95	4.89	3.00
M-2084	12.26	27.17	1.42	1.99
M-2085	12.44	25.20	1.44	1.85
M-2089	11.70	25.99	1.36	1.91
M-2092	11.83	21.27	1.37	1.56
Standard: M-2020	8.63	13.63	1.00	1.00
LSD (5 per cent)	1.13	4.98	....	....

Table 6

Resistance to rinsing of repellents as skin applications against Aedes aegypti.

Repellents	Number of rinses withstood	Ratio to M-2020
First Series (10 tests)		
o-Ethoxy-*N,N*-diethylbenzamide	0.96	0.43
Standards:		
Ethyl hexanediol	.95	.42
M-2020	2.26	1.00
LSD (5 per cent)	.35	....
Second Series (14 tests)		
Diethyltoluamide	5.72	3.53
M-2084	4.53	2.80
M-2085	3.61	2.23
M-2089	4.26	2.63
M-2092	4.59	2.83
Standard: M-2020	1.62	1.00
LSD (5 per cent)	.58	....

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Table 7

Influence of the meta-isomer content on effectiveness of diethyltoluamide as skin applications (10 tests).

Repellent	Per cent of meta isomer	Per cent Concentration	Protection time (hours)		Ratio to 72 per cent meta	
			aegypti	taeniorhynchus	aegypti	taeniorhynchus
Diethyltoluamide	72	25	5.40	...	1.00	...
		50	8.58	5.58	1.00	1.00
	69	25	5.50	...	1.02	...
		50	8.86	5.63	1.03	1.01
M-2108	52	25	5.58	...	1.03	...
		50	8.53	5.18	.99	.93
M-2109	34	25	4.77*	...	.88	...
		50	8.35	4.95*	.97	.89
M-2110	17	25	4.53*	...	.84	...
		50	7.75*	4.37*	.90	.78
N,N-diethyl-*o*-toluamide	0	25	4.15*	...	.77	...
		50	6.33*	4.55*	.74	.81
LSD (5 per cent)	..	25	.63	...	...	...
		50	.78	.53	...	...

*Significantly less effective than diethyltoluamide containing 72% of meta.

wiping and protection time, but diethyltoluamide was three to five times as resistant to wiping as the standard and two to three times as resistant to aging. Against *aegypti* *o*-ethoxy-*N,N*-diethylbenzamide was less resistant to wiping than M-2020, but it was more resistant against *taeniorhynchus*.

Rinsing tests were conducted against *aegypti* to determine whether the chemicals that gave the longest protection times were also most resistant to removal by water. Table 6 shows that diethyltoluamide was the most resistant to rinsing, and that ethyl hexanediol and *o*-ethoxy-*N,N*-diethylbenzamide were less resistant than M-2020. The other mixtures were about in the same order of effectiveness as in the protection-time tests. The difference between diethyltoluamide and the mixtures was less marked than in the wiping tests, but greater than in the protection-time tests.

TESTS were conducted to determine the influence of the ortho- and meta-isomer contents on the effectiveness of diethyltoluamide. Comparisons were made of the pure ortho isomers, technical products containing 72 or 69 per cent of the meta isomer, and mixtures containing 25 (M-2108), 50 (M-2109), and 75 (M-2110) per cent of the ortho isomer. The results of protection time tests with these materials are given in Table 7. In tests with 50 per cent ethanol solutions again *aegypti*, technical diethyltoluamide was significantly more effective than the pure ortho isomer or mixture M-2110, which contained 17 per cent of meta. These two repellents and M-2109, which contained 34 per cent of meta, were significantly less effective than technical diethyltoluamide in tests with 25 per cent solutions against *aegypti* and 50 per cent solutions against *taeniorhynchus*.

Table 8 shows that diethyltoluamide was significantly more resistant to wiping than the ortho isomer and the three mixtures. Against *aegypti* M-2108 was significantly more resistant than M-2109 and M-2110 which were more resistant than the ortho isomer. The rinsing tests against *aegypti* (Table 9) showed no significant difference between any two materials.

Tests with Anopheles quadrimaculatus: Tests were run against *quadrimaculatus* to compare the repellency of two individual repellents and four mixtures with a standard mixture, M-250, at two concentrations. M-250 was used as the standard, because many previous tests had shown it to be slightly superior to the other standards against this species. The arms were exposed to caged mosquitoes for three minutes at 20- to 30-minute intervals until 10 bites were received. Pre- and post-test biting rates were taken on untreated arms and the two counts averaged. The per cent repellency was computed from the biting rates on treated and untreated arms.

Table 8

Resistance to wiping of diethyltoluamide and N,N-diethyl-o-toluamide, alone and in three mixtures, as skin applications against Aedes aegypti (8 tests at full strength) and taeniorhynchus (5 tests with 50% ethanol solutions).

Repellent	% Meta isomer	Number of wipes withstood		Ratio to diethyltoluamide	
		aegypti	taeniorhynchus	aegypti	taeniorhynchus
Diethyltoluamide	69	60.53	34.13	1.00	1.00
M-2108	52	53.98*	25.74*	.89	.75
M-2109	34	48.76*	29.23*	.81	.86
M-2110	17	46.27*	11.03*	.76	.32
N,N-Diethyl-*o*-toluamide[1]	0	22.08*	15.51*	.36	.45

[1]Solid material; used as 50 per cent solution, twice usual volume against **aegypti**.
*Significantly less resistant than diethyltoluamide.

Table 9

Resistance to rinsing of diethyltoluamide and N,N-diethyl-o-toluamide, alone and in three mixtures, as skin applications against Aedes aetgypti (8 tests).

Repellent	Number of rinses withstood	Ratio to diethyltoluamide
Diethyltoluamide	6.11	1.00
M-2108	5.45	.89
M-2109	5.03	.87
M-2110	4.58	.75
N,N-Diethyl-*o*-toluamide[1]	4.70	.77
LSD (5 per cent)	2.24	...

[1]Solid material; used 50% solution; twice usual volume.

Results of the tests are presented in Table 10. At 10 per cent concentrations diethyltoluamide and the four mixtures containing it were more effective than M-250, whereas at 5 per cent diethyltoluamide was equal to M-250 and the mixtures were less effective. *o* - ethoxy - *N,N* - diethylbenzamide was much less effective than the other repellents.

Tests with Mansonia per-

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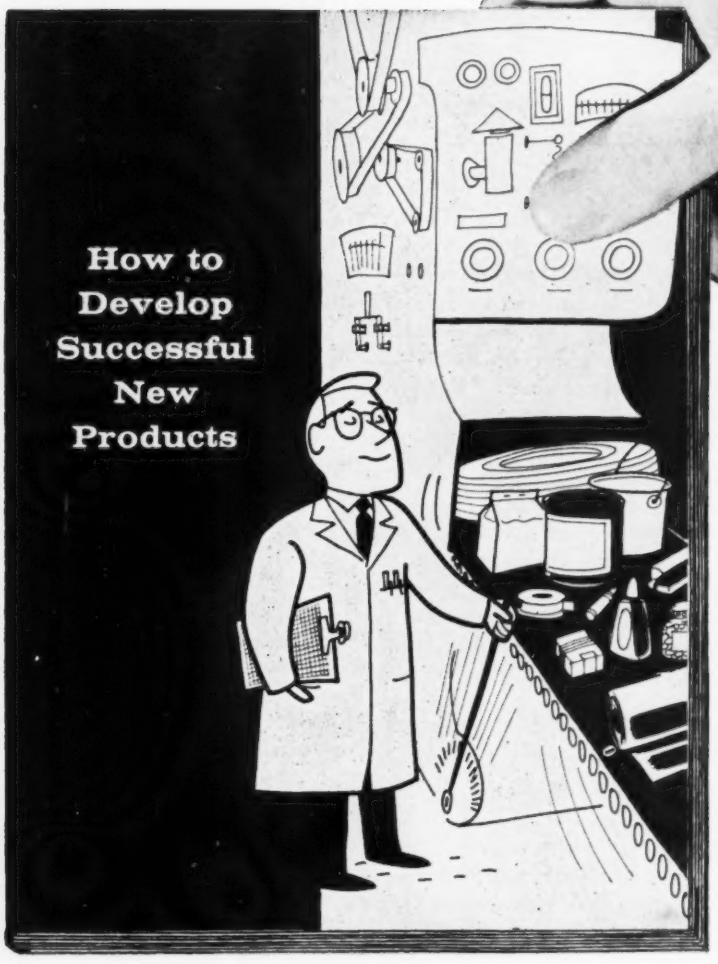

An exclusive new product can expand your present markets, open up new ones. YOU can introduce such an exclusive. If you are hesitating because of the risks involved or because you're not sure what to do, THEN YOU NEED THIS BOOK!

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Alert managements requested copies as soon as they heard about it, and a surprisingly large percent, after reading it, have followed through to carry their own ideas forward to swift success.

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In a fast-moving competitive economy, a mere month's delay in introducing a new product or feature can make the difference between *capturing* a larger share of your market or *fighting tooth and nail* for it. This brochure shows you how proved techniques for successful new product development can help your company minimize the risks . . . increase the probabilities of capturing markets before your competition knows what's happening!

LIKE THE DAWN OF A NEW DAY . . . IT COSTS NOTHING

. . . nothing but a request from you on your letterhead to gain what may well prove to be your most rewarding insight into the secrets of successful new product development. Simply ask for "HOW TO DEVELOP SUCCESSFUL NEW PRODUCTS." Write to Foster D. Snell, Inc., Dept. S-4, 29 West 15th Street, New York 11, N. Y. Supply is limited, so do it today! No obligation.

This 24-page brochure tells you:

- How to be 1000% more successful with your new product ideas
- How to spot the causes of failure and avoid them
- When and Why you should develop new products
- How and Where to get new product ideas
- What to do to pre-determine consumer and dealer reactions
- What details to consider regarding Financing, Raw Materials, Packaging
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SNELL 36 YEARS OF SUCCESSFUL NEW PRODUCT RESEARCH AND DEVELOPMENT

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Table 10

Comparative effectiveness of two individual repellents and five repellent mixtures against Anopheles quadrimaculatus (6 tests).

Repellent	Per cent Concentration	Per cent repellency at first exposure	No. of effective periods[1]
Diethyltoluamide	5	98.3	2.33
	10	99.8	4.33
o-Ethoxy-*N*,*N*-diethylbenzamide	5	82.2	0
	10	94.2	0.83
M-2084	5	89.6	.50
	10	99.6	3.67
M-2085	5	97.8	2.00
	10	99.9	4.33
M-2089	5	90.3	.33
	10	99.1	4.17
M-2092	5	97.6	1.33
	10	99.6	5.67
Standard: M-250	5	98.2	2.33
	10	97.1	2.67

[1]Less than 10 bites in 3-minute test period.

Table 11

Comparative repellency of five mixtures and two individual compounds as skin applications against Stomoxys calcitrans (12 tests; 25% ethanol solutions).

Repellent	Protection-time tests		Wiping tests	
	(Hours)	Ratio to M-2020	Number of wipes withstood	Ratio to M-2020
Diethyltoluamide	8.00	2.41	28.68	20.34
M-2084	6.06	1.82	8.42	5.97
M-2085	6.23	1.87	10.10	7.16
M-2089	6.57	1.98	14.31	10.15
M-2092	7.64	2.30	11.94	8.47
Standards:				
Ethyl hexanediol	1.53	.46	.43	.30
M-2020	3.32	1.00	1.41	1.00
LSD (5 per cent)	1.17	...	2.19	...

turbans: Three individual repellents and three mixtures were tested against *perturbans*. The materials were dissolved in ethanol at concentrations of 1.25, 2.5, 5.0, and 7.5 per cent. The solutions were applied at the rate of 1.0 ml. per forearm or 1.5 ml. per leg. Applications were made in the evening from five to 10 minutes before the mosquitoes of this species usually begin to bite. Each evening an untreated limb was used to determine the normal biting rate. From the time required to receive 10 bites on the treated limb, transposed to bites per minute, and the biting rate per minute on the untreated limb, the per cent protection was computed. At the two highest concentrations all the repellents were about equal in effectiveness, with averages of from 90 to 96 per cent. At the lower concentrations *o* - ethoxy - *N*,*N* - diethylbenzamide was the most effective. The computed concentrations of the repellents required to give 90 per cent repellency are shown below:

	Per Cent
Ethyl hexanediol	3.94
o-Ethoxy-*N*,*N*-diethylbenzamide	.99
Diethyltoluamide	3.90
M-2020	4.53
M-2084	4.62
M-2085	2.73

At full strength all the repellents afforded complete protection throughout the short period in the evening when this species was active.

Tests with Stomoxys calcitrans: Two series of tests were conducted against *calcitrans* (the stable fly) to compare 25 per cent ethanol solutions of five mixtures and two individual repellents. As shown in Table 11, in protection-time tests diethyltoluamide was significantly more effective than M-2084, M-2085, and M-2089, but the difference was not significant with M-2092. All were more effective than M-2020, which was about twice as effective as ethyl hexanediol.

Diethyltoluamide was the most resistant to wiping, and the differences between it and the mixtures were highly significant. The mixtures were six to 10 times more resistant than M-2020, and ethyl hexanediol showed the least resistance to wiping.

Tests with Chrysops atlantica: Five repellent mixtures and two individual compounds were tested as skin applications against *atlantica* (deer flies) near the shore of the Ogeechee River in Georgia. From five to 25 flies were active about each subject per minute. The subjects were continuously in motion, with treated arms elevated during the testing period. The adjusted average times to the first confirmed bite for each repellent and the ratios to M-2020 are given in Table 12. Diethyltoluamide and M-2092 were the most effective, being 50 per cent more effective than M-2020. M-2084, M-2085, and M-2089 were 20 to 40 per cent more effective than M-2020, and *o*-ethoxy-*N*,*N*-diethylbenzamide was about 40 per cent less effective.

Tests with Culicoides canithorax: Three mixtures and three individual repellents were tested as skin applications against *canithorax* (sand flies) on the shore of the Ogeechee River in Georgia. The results of these tests, given in Table 12, show diethytoluamide to be slightly more effective than M-2020, with a ratio of more than 1.23. The other treatments were about equal to M-2020, with ratios of from 1.04 to 1.18.

(To be concluded)

Table 12

Results of tests with three individual repellents and five mixtures as skin applications against Chrysops atlantica (9 tests) and Culicoides canithorax (7 tests).

Repellent	Protection time (hours)		Ratio to M-2020	
	atlantica	canithorax	atlantica	canithorax
Diethyltoluamide	2.77	9.60+	1.51	1.23+
o-Ethoxy-*N*,*N*-diethylbenzamide	1.08	8.25	.59	1.05
M-2084	2.23	8.80	1.22	1.13
M-2085	2.52	9.23	1.37	1.18
M-2089	2.32	...	1.27	...
M-2092	2.83	8.82	1.54	1.13
Standards:				
Ethyl hexanediol	...	8.15	...	1.04
M-2020	1.83	7.82	1.00	1.00

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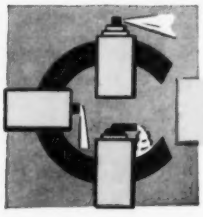

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Table V. General statistics for the cleaning and polishing preparations industry (S. I. C. Code 2842), by regions and selected states: 1954 and 1947.

Region and State	1954										1947	
	Establishments, No.	All employees		Production workers			Value added by manufacture	Cost of materials etc.	Value of shipments	Capital expenditures, new	All employees, number	Value added by manufacture
		Number	Payroll ($1,000)	Number	Man-hours (1,000)	Wages ($1,000)	($1,000)	($1,000)	($1,000)	($1,000)		($1,000)
United States, Total	1,150	19,359	85,049	11,569	22,368	38,223	287,013	272,865	559,870	12,740	15,387	136,602
New England	130	2,104	9,982	1,042	2,095	3,576	24,916	22,070	46,987	2,198	2,507	16,446
Massachusetts	89	1,394	6,446	684	1,353	2,398	17,951	15,786	33,738	572	2,101	13,315
Middle Atlantic	313	5,641	22,356	3,631	7,034	11,323	69,521	78,646	148,169	1,788	4,729	48,862
New York	165	2,494	9,498	1,698	3,240	5,124	32,628	31,314	63,942	506	2,526	27,711
New Jersey	84	2,329	9,876	1,395	2,796	4,498	30,064	39,020	69,085	941	1,360	16,145
East North Central	285	6,399	31,064	3,802	7,493	13,749	132,303	110,813	243,116	5,916	4,561	
Illinois	97	1,751	8,078	1,131	2,319	4,043	33,813	30,401	64,214		1,783	
West North Central	102	1,419	6,173	856	1,588	2,917	20,272	26,565	46,839	785	919	
Missouri	51	1,109	4,964	641	1,241	2,372	17,832	24,500	42,333	563	537	3,352
South and West	320	3,794	15,473	2,235	4,154	6,653	39,996	34,768	74,757	2,049	5,671	

Source: 1954 Census of Manufacturers, U. S. Department of Commerce, Bureau of Census. Page 3 (Series: MC-28-4.2).

Industrial Detergents

(*From Page 50*)

successfully used in both household and industrial products.

Product Development

IN the field of product development, there are certain functions of industrial detergents that are currently being emphasized. These compounds are being made oil soluble by the use of higher molecular weights and complex starting stocks. Although they are not suitable for use in aqueous media, they are very effective when the medium is oil.

Similarly, a technology of producing detergent acids in highly concentrated form is slowly developing that is parallel to the old technology of fatty acids. The end results are, of course, quite different and the development of this function leads to new products.

Functional product development is also taking place in the compatibility of industrial detergents with high-strength alkalis. In many cases, industrial use would not be possible without a specific detergent to work in the alkaline medium. In the same way, there is emphasis on detergents the function of which is spreading rather than penetration. This is a point that is often not understood because the two functions are largely antagonistic.

Finally, there is functional product development on the property of foam control both on the high end and the low end of the scale. On the high end of the scale the results have been successful, but on the low end of the scale of absolutely no foam, the field has proved more stubborn.

Process Development

IN the field of process development, there is large and continuing emphasis on control of ethoxylation. It is being demonstrated here that many properties can be altered by processing and it is expected that improvements will be announced by several companies this year. Also in the field of processing there is steady emphasis on the technique of vapor phase sulfonation with sulfur trioxide. This processing is now up to the point where several equipment companies are showing flow sheets with suggestions on how to carry out such an operation.

Due to the availability of high strength detergent acids, there has been considerable process de-

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PACKAGE FOR PROFIT IN 1957

In the cologne market

survey data shows how growth aerosols point the way to volume sales

Aerosol colognes have shown dramatic sales power since they first appeared in 1953. In two years they captured 36% of total domestic cologne sales. By 1967—based on survey findings and experience with similar aerosol products—aerosol colognes could have 75% market penetration.

Du Pont's new survey reveals aerosol colognes are preferred 3 to 1 over all other types of packaging combined, by women who try them. Here are some of the reasons why: easy and neat to use, doesn't evaporate, spill-proof package and lasting fragrance freshness.

Yet only 26% of those interviewed had ever heard of colognes or toilet water in an aerosol, and only 12% had ever tried them. Imagine the big-volume, big-profit sales waiting for you when you capitalize on high consumer satisfaction with aerosol colognes spotlighted by this survey. Why not take advantage of this potential and promote aerosols?

SEND FOR YOUR FREE COPY of Du Pont's survey report on the cologne market. Write E. I. du Pont de Nemours & Co. (Inc.), "Freon" Products Division 134, Wilmington 98, Delaware.

"Fragrance promises to be new aerosol best seller," is the report from a New York City department-store cosmetic buyer. "Aerosol colognes are both functional and extremely attractive. A really bright potential for the future growth of cosmetics lies in the aerosol field."

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velopment on direct neutralization of alkaline builders in ways that are termed "dry neutralization." Where this is practiced, it eliminates drying in ordinary processing and is capable of readily making compounds of lower activity.

New Applications

THE market development of new uses of industrial detergents can be illustrated by five or six examples. In emulsion paints it is now possible to turn out an oil-base paint of any desired drying characteristic which can be thinned with either turpentine or water and which is suitable for either interior or exterior use. If the public accepts products such as these, it will undoubtedly open the way for further development in this field of special emulsifiers.

Recently in the Middle West there has been a large scale use of detergents to assist in the fracturing of oil bearing formations by means of sealing the walls of the oil bearing cavities with a detergent. This is a good illustration of surface active agents that do not penetrate and are valuable for this reason.

There has developed from the original process of Chem-milling a further extension in which hard, temperature resisting alloys are brought to shape and smoothness with detergents on the acid side in the same way in which aluminum is milled by alkali in the original process.

Further along the line of special detergents that must both spread and penetrate, we have the quiet growth of fire-fighting in which restricted amounts of water are made to do a better job in a shorter time. This application is capable of using many special purpose detergents and these will be forthcoming as volume increases.

Oil soluble detergents are so commonplace in the automobile engine that they can be easily overlooked. They are one of the major reasons for the 100 million pounds of petroleum sulfonate shown in the Tariff Commission Report. The potential market here is four to five times as great as the present market, wherefore it has been humorously remarked with the proper detergent in a lubricating oil, you can throw away the oil and do a better job of lubrication.

Another illustration of the development of new markets for synthetic detergents is their use as air entraining agents in Portland cement. Some cement mills now are selling almost half of their total production with air entraining agents incorporated. The latest specifications of the U. S. Bureau of Public Roads and of the cement association divide cement into several types with specific air entraining properties in each one. The size of the market is revealed when it is calculated that even .01 per cent of detergent in cement in a plant that turns out 30,000 barrels daily, can amount to a carload or more of detergent per day.

In the examples cited it will be noted that product and raw material development progress simultaneously with market and process development. It is, doubtless, a truism that the development of industrial detergents depends upon all four bases at all times. The heart of the development lies in the organic molecule, and in such organic molecules the making of new active ingredients that perform a given function better for a lower cost is the most desired goal.

Summary

IN summary, therefore, new active ingredients call for new compounding with inorganic agents and, though often developed for a single use, find new uses once they are commercialized. Special use problems that arise intensify the need for more developments in active ingredients.

Further, it is our opinion that the move toward petroleum in the industrial detergent field is about one-third complete. The goals of industrial detergents in the future must lie in less costly active ingredients, less need for special combinations of fillers, a greater control of foam built into the molecule and simpler processing requirements. In organic chemistry, and in organic chemical development, it is usually true that where a number of desired properties can be incorporated in a single molecule it proves to be far more useful than the attainment of a compromise of properties by mixing. We hope that in the future this goal of research and development in industrial detergents will continue to bring out results that will build on those it has achieved in the last ten years.

—★—

Solvay Names Hanchett

Arnold Hanchett has been named assistant development director of Solvay Process Division of Allied Chemical & Dye Corp., New York, it was announced recently by C. P. Hackett, director of development. Since 1952, Mr. Hanchett has served as technical manager of Solvay's development department. Mr. Hanchett joined Solvay in 1920 as a plant chemist, transferred to the engineering department in 1930, and was later appointed a development engineer. In his new post, he will headquarter at Solvay's Syracuse, N. Y., plant.

—★—

ADM Names Four

Realignment of the resin sales organization of Archer-Daniels-Midland Co., Minneapolis, was announced recently by W. G. Andrews, ADM assistant vice-president and manager of the resin and plastics division. W. C. Mueller has been appointed assistant division manager, while E. W. Kaufmann has been named sales manager of resins.

According to Mr. Andrews, the division has established four new sales regions which will control resin sales and introduction of new products in areas served by ADM branch offices. Appointed supervisors of these new sales regions were Clyde C. West, Los Angeles; Earl Erlandson, Chicago; Gale Smith, Cleveland; and William R. Dodds, Newark, N. J.

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Floor Products
Insecticides
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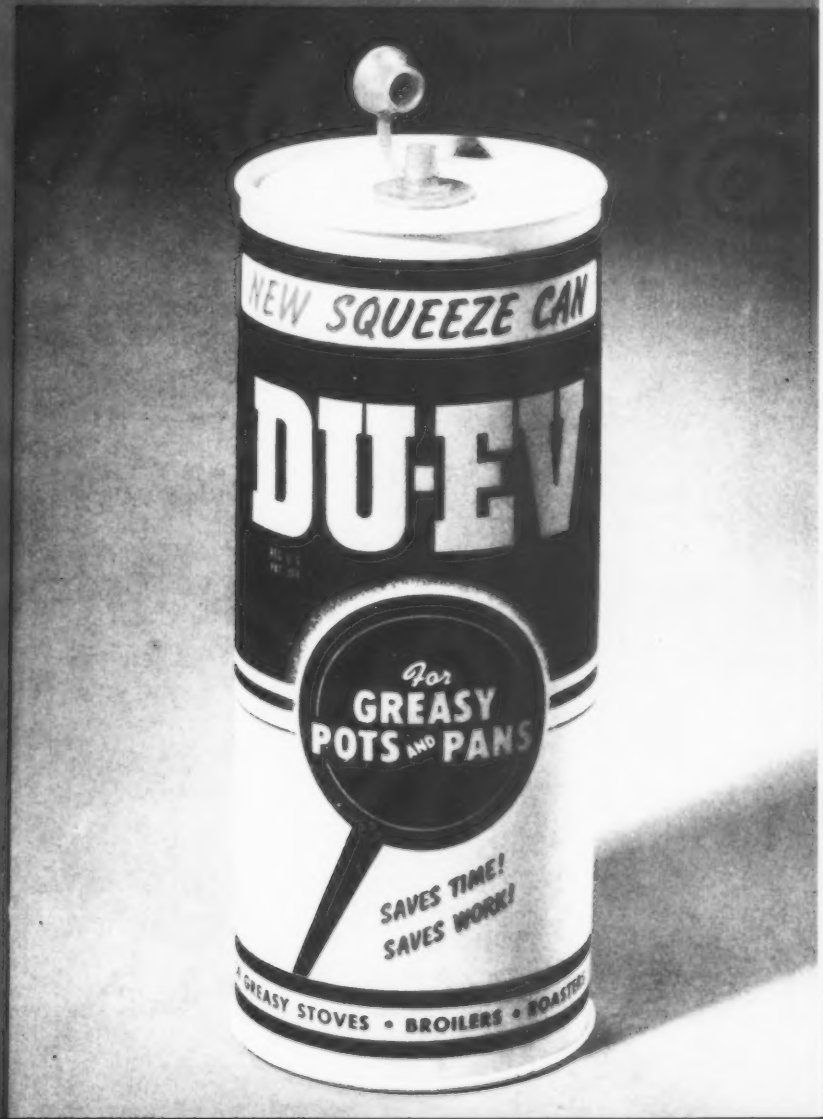
Moth Products
Polishes
Shampoos
Shave Products
Soaps
Liquid Starch
Toiletries
and other
Chemical Specialties

A market for over 20 billion packages annually



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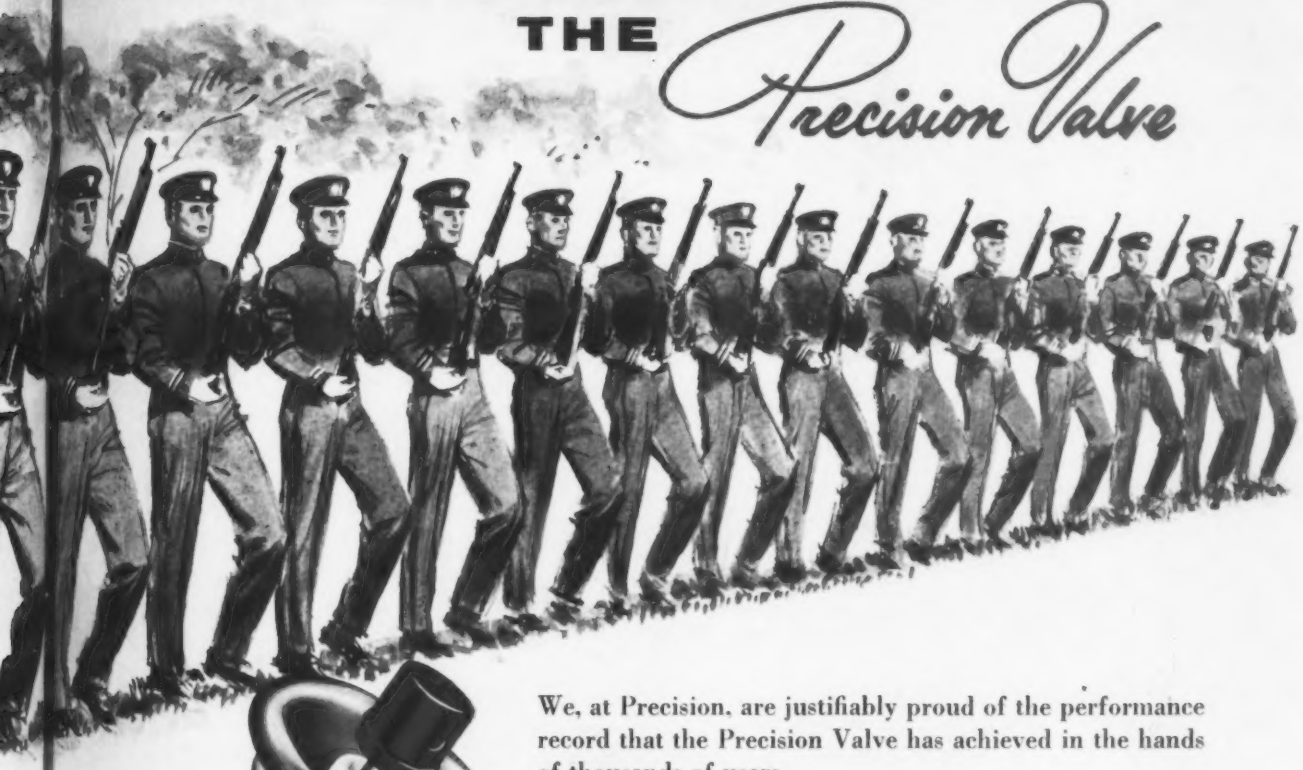

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The "Queen Size" container is available with Canco's one-inch cup opening top, or an individually styled one-piece top. Either will accommodate a variety of valves and both are adaptable to all filling and closing equipment.

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- Canco containers cost less initially, because they're mass-produced on standard can-making equipment.
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- Canco works directly with valve makers and contract loaders to give you the most efficient package at lowest cost.
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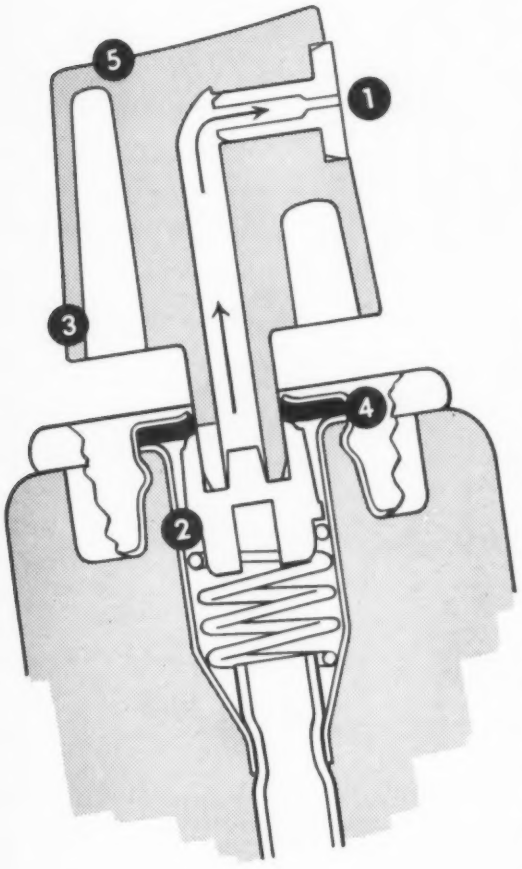

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It's slim . . . feminine . . . ideal for cosmetics!

It's Canco's 8-oz. "Queen Size" pressure container!

Any woman will appreciate this slim, graceful, easy-to-hold container. That's why it's perfect for cosmetics—hair sprays, lotions, creams and many others.

The "Queen Size" container is available with Canco's one-inch cup opening top, or an individually styled one-piece top. Either will accommodate a variety of valves and both are adaptable to all filling and closing equipment.

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- Canco works directly with valve makers and contract loaders to give you the most efficient package at lowest cost.
- Canco's many plants assure you prompt service, uninterrupted production schedules.

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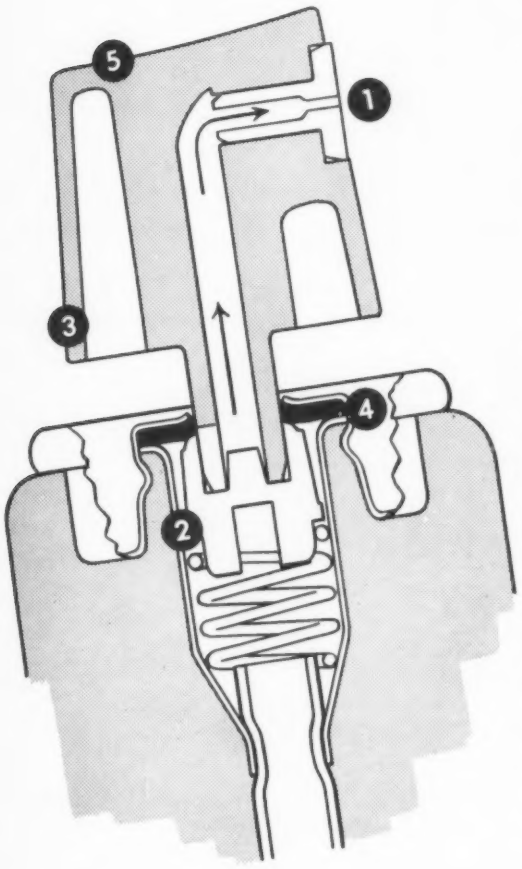
Newman-Green Aerosol Valve Design Assures Smooth Manufacturing— Happy Aerosol Customers

ELIMINATES PARTS THAT CLOG OR STICK, MAKES VALVE OPERATION TROUBLE FREE



The Newman-Green valve design is simplified through creative engineering. Here's how:

1. *orifice of pattern insert is cored, not drilled, which assures uniformity from one valve to next,*
2. *small, inaccessible metering orifices are completely eliminated,*
3. *patterns can be changed quickly by switching spray heads only,*
4. *valve assembly can be used on any type of pressurized products,*
5. *large curved finger surface operates easily, takes less effort to spray.*

All these design advantages, and the fact that Newman-Green valves work effectively in metal, glass or plastic containers, give you these major reasons for using Newman-Green valves.

AEROSOL LABORATORIES throughout the country have approved the Newman-Green valve design. Tough end uses like paint sprays operate best with a Newman-Green valve.

MANUFACTURING runs smoothly with Newman-Green valves going on aerosol containers. Simplicity of design assures smooth valve operation, eliminates production stops.

SALES GROW when you eliminate the sales problem of dissatisfied customers returning containers that do not work due to faulty valve operation. Newman-Green aerosol valves give dependable service all the time.

PROFITS INCREASE with a Newman-Green valve that has laboratory approval, goes smoothly through your assembly operation and will help assure customer acceptance for your aerosol products.

Remember, Newman-Green valves are adaptable for a wide range of aerosol products including paints, personal products, insecticides, hair lacquers, room deodorants, perfumes, etc. Send in the coupon below for free information.

Here are three typical spray heads, all interchangeable in seconds. Shown are wide, mist and fan spray patterns.

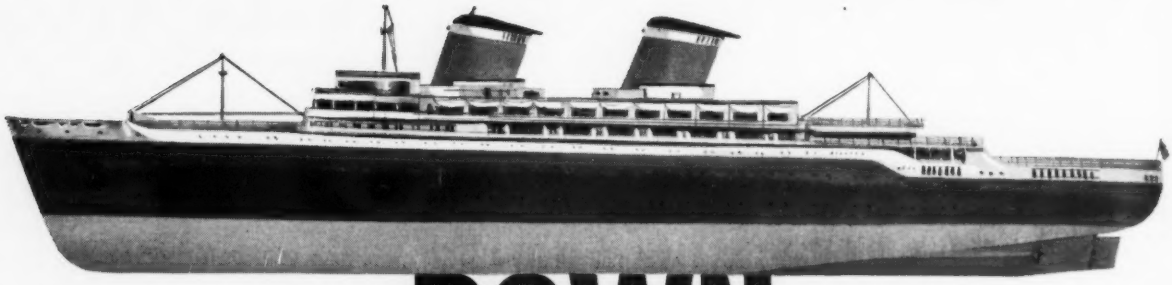
NEWMAN-GREEN, INC.
151 Interstate Road
Addison, Illinois
Please send me free of charge your price schedule and descriptive brochure.

Name _____ **Title** _____
Company _____ **Address** _____
City _____ **State** _____
Valve Application _____

NEWMAN-GREEN *Creative Aerosol Valve Engineering*

151 Interstate Road, Addison, Illinois

"Another product safely shipped in Inland 'protection-eered" Containers"*



DOWN DOWN DOWN GO BARNACLE BILLS

International Paint Company of New York City is getting steamship companies out of many a tough scrape. One of the International's products, *Supertrop Antifouling #1609*, is making barnacle scraping a thing of the past. The product, brushed on to ships' hulls, prevents the attachment of underwater organisms; this helps reduce maintenance and repair costs.

Lithographed containers (to keep a family resemblance with other products in the line) was the goal of International Paint. This called for a special lining that would not only ship their hard-to-hold product but one that would also permit lithographing of the container. Inland's lining experts solved this two-fold problem with a tailor-made lining applied to an attractively lithographed pail.

Whether your products are used on land, on sea or in the air, whether you now use steel containers or not . . . if you have a packaging problem, Inland Steel Container is ready to help you. Write Bob Boecher, Dept. 331 D.

**the right container, with the right lining for your product*

INLAND STEEL CONTAINER COMPANY

Division of Inland Steel Company • 6532 S. Menard Avenue • Chicago 38, Ill. • Plants: Chicago, Jersey City, New Orleans, Cleveland and Greenville, Ohio.

Full line of steel and stainless steel shipping containers, including galvanized and heavy duty ICC drums.

INLAND

"It's Better to Ship in Steel"

1st For Custom Packaging

STALFORT

Since 1878, one of the leading manufacturing chemists to develop, manufacture, and package under private labels all types of waxes, polishes, and cleaners. Custom packaging of liquids or solids in glass or tin — our formula or yours.

- Liquid and paste wax
- Deodorizers, air purifiers
- Dyes, polishes, cremes

Automatic filling and labeling equipment

1st For Custom Loading

AEROSOLS

Newly expanded facilities, with a complete research and development laboratory, makes Stalfort one of the most modern and best equipped aerosol fillers in the country.

- 58,000 sq. ft. modern facilities
- Pressure fill and cold fill
- High speed filling lines
- Multi-stage
- Chillers & bulk storage

STALFORT PRESSURE-PAK ★ **JOHN C. STALFORT & SONS, INC.**

Plants — Arbutus, Baltimore

Office — 321 W. Pratt St., Baltimore 1, Md.

Preferred for Foam Product Dispensing because of Functionally Superior,

Clayton
"NOZZLE DOWN"

dispensing valves and covers

Ever increasing and impressive...the nation-wide preference for "Nozzle Down" valves and covers for shaving creams, hand creams, shampoos, suntan creams, rug and upholstery cleaners . . . all foam dispensed products! Why this definite Clayton-trend? Because of these proven, outstanding Clayton features:—

ABSOLUTELY TROUBLE FREE! Proven simple non-clogging design.

GREATER PRODUCTION ADVANTAGES! Valves can be pressure filled. Reports from users indicate very highest production speeds.

ALL VALVES AVAILABLE WITH COATED MOUNTING CUPS! Colored-enamel exterior coatings . . . highest quality corrosion-resistant interior coatings.

COMPLETELY, SECURELY ASSEMBLED! Nothing to put together. Components can't come apart in shipment or use.

VARIOUS FLOW RATES!—to suit specific product requirements!

FIT ALL TYPES OF PRESSURE CONTAINERS with standard 1" diameter openings. Also available for 202 and 211 diameter pressure-type cylindrical containers of all sizes.

NO ACCIDENTAL DISCHARGES! Exclusive screw cover principle assures absolute safety. Valve is securely locked in non-dispensing position when covered.

TIME-TESTED AND PROVED ON HUNDREDS OF MILLIONS OF CONTAINERS!

These Clayton Products Give Your Package

MORE GLAMOUR...MORE SALES APPEAL!

Clayton's "Dress-Up"™

Plastic skirt simply and permanently snaps on to top of container.

Glama-Walls™ and Covers

The Glama-Wall snaps on permanently to standard production containers. User simply removes small, handsomely designed locking screw cap. Available in an unlimited variety of colors, shapes and sizes.

For details on more attractive, economical and efficient packaging for your foam product...write, phone or wire

Clayton
CORPORATION

Proven Outstanding Features!

NO MISSES—NO MESSES...WITH NATURAL "NOZZLE DOWN" DISPENSING!
Points the product where you want it! Leaves no excess on side of can.

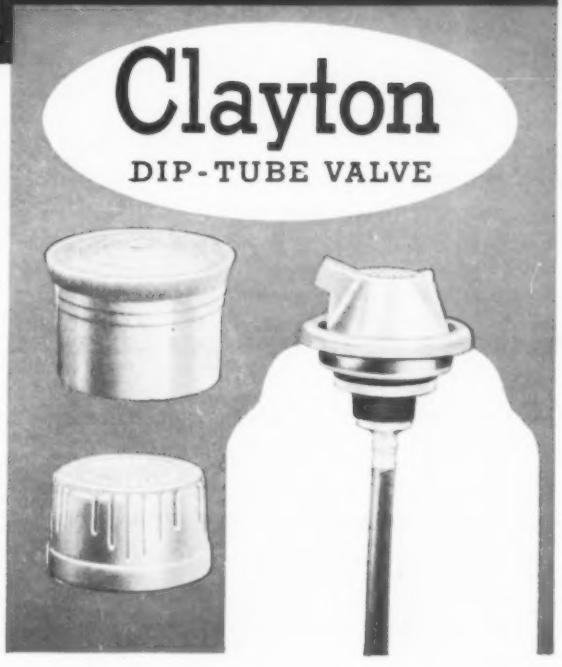
THE ONLY POSITIVE ACTION SCREW COVER AVAILABLE ON THE MARKET!
Stays securely!—one easy three-quarter turn and your product is safe for shipping. Handsomely designed . . . adds a finished appearance to your product.

UNIQUE, DISPENSING
Perma-Cover™

Screws on like a regular cap in production . . . never comes off! A simple turn, it dispenses. Another turn, it closes.

Now These Important Features In a Dip-Tube Valve!

- Dispenses with forward or downward push.
- Pressure fills at highest production speeds.
- Permits uniform gassing.
- Assures smooth, uniform dispensing of products.
- Available with coated mounting cups . . . colored-enamel exterior coatings — highest quality corrosion-resistant interior coatings.
- No metal valve parts exposed to product.
- Covers fit better . . . protect better.



4205 FOREST PARK BOULEVARD
SAINT LOUIS 8, MISSOURI

glass containers move more chemical specialties

Use **Anchorglass®** *containers sealed with* **Anchor®** *caps*

. . . because they are preferred by housewives

YOUR products move through check-out counters faster, in greater volume, when packed in glass. Housewives prefer glass packages because they do not rust, corrode or leak. Volatile contents do not evaporate . . . dry products do not absorb moisture. Glass containers afford a visual inventory, are easy and safe to open, convenient to use. They reseal tightly to protect unused portions. Move more of your products in containers housewives prefer—glass . . . Anchorglass containers sealed with Anchor metal or molded closures.

ANCHOR HOCKING
GLASS CORPORATION
Lancaster, Ohio

Spotlight on Aerosols at Packaging Show

Complete aerosol filling line in operation at Chicago exposition attracts wide interest

THE National Packaging Exposition in Chicago, April 8-11, afforded Mojonnier Associates, Inc., of Franklin Park, Ill., an opportunity to present a dramatic demonstration of the ease and efficiency with which an aerosol product filling line can be operated.

Attendance at the show in Chicago's vast International Amphitheatre was around 30,000 persons. Indicative of the interest in aerosols was the fact that many visitors stopped at the Mojonnier booth to watch the process.

Because of space limitations the standard Mojonnier "package" unit was shortened to about one-fourth of its full capacity. Included in the setup was a four-spout compartmented cold filler, automatic valve crimper, water bath, packing table, refrigeration unit, transfer pump for the propellant and a product pump.

Used for demonstrating the filling operation was a cologne made by Fluid Chemical Co., Newark, N. J., while the bottle was fabricated by National Plastics Co. from the new du Pont "Zytel" nylon resin. Valves and overcaps were by Risdon Mfg. Co. Du Pont's "Freon" propellant was used and other bottles were also furnished by Continental Can Co.

Employed in the operation was the cold fill method, in which both the product and the propellant are refrigerated to −30°, at which temperature the gas is liquid. This cold fill method, the company maintains, is faster and more efficient than the pressure fill method.

Featured in the line was Mojonnier's recently developed valve crimper, shown in the March issue of *Soap & Chemical Specialties*. It can be used on glass or nylon plastic containers and its speed was said to be some 60 per cent greater than roll seaming.

Attention was called also to the ability of the valve crimper to crimp with the valve actuator button in position, thereby eliminating additional labor in re-assembling valve components that have become separated. First showing was made, too, of a new plastic "puck" for holding the bottle. Still another new feature was the short span water bath with conveyor chain 14 inches wide, which increases capacity of this section of the line where plant space is limited.

Another device shown for the first time, was a weight control mechanism which automatically notes variations in fill and corrects these by readjustment of the timer, thereby guaranteeing correct fill.

The line, as operated with four girls at the various stations, has a capacity of thirty, six-ounce bottles per minute but was run more slowly so that operations could be closely observed. During the four-day run of the Exposition about 15,000 bottles of cologne were filled and packed in shipping cases for disposal through the manufacturer's regular channels.

Unveiled at the show was a prototype model of a new 16-nozzle Mojonnier "electromatic" rotary filler which was to be used later by a Chicago firm for bath oil, viscous medicinal body rub and a viscous shampoo. Other models will be available with 12 and 24 filler heads, the company announced. Utilized on this filler is the electromatic filling principle, pioneered by Mojonnier, which employs a magnet to operate the filling valve.

Company spokesmen pointed out that all Mojonnier equipment is unitized so that lines can be added to or changed at will. The line displayed at the Chicago Exposition, it was emphasized, is another advance in the company's constant effort to provide complete automation for aerosol loaders, thereby increasing profits of the operators.

Among the staff at the booth were A. B. Mojonnier, president, R. G. Hill, sales manager, John Bader, midwest sales director, Ed Zeller, eastern sales representative, Frank Craig, advertising manager, and Case Allen of the dairy sales division.

General Chemical Division of Allied Chemical & Dye Corp., set up an aerosol information clearing house in their booth, where inquirers could obtain in one place literature on aerosols provided by seven suppliers of containers, valves and other components for aerosols. A display was made of numerous aerosol products now on the market and one unique feature at the General booth was an assembly of containers labeled to suggest new products that might be dispensed from pressure packages, if any manufacturer wanted to develop the idea further.

Asked about this, G. T. Parker, midwest sales and sales promotion manager, explained that if any new product does come out of this display it would widen the market for the "Genetron" propellants made by General Chemicals.

American Can Co. and Continental Can Co. allotted a corner of their large exhibit areas to dis-

Central Can's

—well earned reputation for outstanding service is protected by operational flexibility

VISIT US AT THE
C. S. M. A.
Meeting
in Chicago

INTERIOR PROTECTIVE COATINGS

Consult us regarding your packaging problem.
Our many years of scientific experience in application of protective interior coatings for all types of products is at your disposal.

CENTRAL CAN COMPANY
2415 W. 19th St., Chicago 8, Illinois

play of aerosol containers they make bearing the labels of their customers. Crown Cork & Seal Co. suggested in their display the pressure packaging of cake frosting, antiseptics and butter. This latter, according to Crown, could be sprayed lump free on toast.

The new processing technique for "spin welding" of plugs and valves into aerosol bottles was featured in the large booth of E. I. du Pont de Nemours & Co. This process utilizes frictional heat, generated by rotational rubbing of two surfaces, to melt and join them together. It works especially well with bottles made of the new "Zytel" nylon resin. Also dwelt on was the safety and beauty in color and shape of Zytel bottles.

Numerous suppliers to the aerosol business had on display items ranging from caps and closures to filling, coding and labeling machines, thus rounding out one of the most complete displays of products for pressure packaging.

Owens-Illinois Glass Co., Toledo, O., exhibited the latest packaging developments of its glass container division and Kimble Glass Co. subsidiary at the National Packaging Exposition.

The O-I container division displayed new lighter-weight glass jars, price spot marking plastic closures and shipping cartons. Kimble featured new perfume bottles, snap-cap opticlear vials and a new line of drug containers. The company was represented at the show by personnel from its Toledo and San Francisco branch offices.

★

Canco Elects Milliken

American Can Co., New York, recently announced the election of Minot K. Milliken as a director. Mr. Milliken is vice-president and a director of Deering Milliken & Co., New York, a textile firm. He is also a director of Mercantile Stores Co., Irving Trust Co. and National Distillers Products Corp. As a director of American Can he succeeds L. W. Graaskamp, who has resigned.

Packaging NOTES

Imco Container Expands

Imco Container Corp., Kansas City, Mo., recently announced the establishment of a Canadian subsidiary, Imco Container Canada, Ltd. The new unit will maintain headquarters in Toronto where it has acquired facilities for the manufacture of its complete line of polyethylene bottles. The company will produce both standard stock molds in a variety of sizes as well as private mold containers. Consolidated Bottle Co., Ltd., Toronto, will serve as exclusive sales representative in Canada for Imco.

★

New Foil Carton Plant

Reynolds Metals Co., Richmond, Va., recently began construction of a $3,500,000 foil carton manufacturing plant in that city. Scheduled for completion in early fall, the new one-story, all-aluminum building will contain 135,000 square feet of floor space and feature the latest handling and production line equipment. The new unit will produce foil-laminated cartons, paper cartons, foil overwraps, and foil and paper labels.

★

New Cone Top Containers

A new line of cone top containers for packaging liquid soaps and detergents, waxes, polishes, rug cleaners, glass cleaners and brake fluids, and other chemical specialties, was introduced last month by Continental Can Co., New York. The new line consists of cans in six sizes ranging from four to 33.5 ounces.

The 12, 16, 18 and 33-ounce containers feature concave bottoms and are available with beaded or one-inch screw necks. The four and six-ounce cans are designed with concave bottoms, but come with the beaded neck. The 11 to 13-ounce container has a flat bottom and may be obtained with either type neck style.

★

Canco Names Turner

Robert A. Turner has been named assistant west coast sales manager of American Can Co., New York, it was announced recently. Mr. Turner, formerly a company sales representative in southern California, will headquarter in San Francisco. In his new assignment, Mr. Turner will help supervise the firm's customer relations program in Alaska, Oregon, Washington, California, Nevada, Arizona and northern Mexico. He joined Canco in 1947 as an engineer.

★

Sales Power of Package

Packaging now is a major factor in obtaining and retaining markets for many products according to John C. Newell Jr., marketing director of the Folding Paper Box Association. Appraising recently the entries in the 1957 folding carton competition sponsored by the association Mr. Newell said that shelf space in a modern food store is worth today about $128 a lineal foot. Hence an item must return $10.66 per inch merely to justify initial investment.

Three basic factors have

"What are we doing about uniform quality and prompt delivery of steel containers?"

"We're getting high quality from J&L ... and they have a plant near every one of ours."

- J&L steel containers provide engineered packaging for dependable transportation and safe storage.
- J&L specialists, backed up by modern research, are ready to consult on your toughest packaging problems.
- Precise fabrication and correct specification of fittings and closures.
- Prompt dependable delivery from nine plants.
- J&L, an integrated steel producer, controls container quality from start to finish.

Call your nearest J&L Container Division office for recommendations on your packaging problems. Or write direct to the Container Division, 405 Lexington Avenue, New York 17, N.Y.

Jones & Laughlin
STEEL
... a great name in steel

made the package the deciding factor in the fight for space on retailers' shelves:

1) Continued shrinkage of available space—in spite of large stores—due to introduction of many new items (about 6000 food items annually).

2) Growth of self-selection in all forms of retailing—putting the main selling burden on the package.

3) The fact that packaging has assumed many of the sales clinching aspects of advertising and point-of-sale.

In analyzing ingredients of a good merchandizing package Mr. Newell listed the following:

1) Protection: safeguard contents from damage and abuse in handling.

2) Identification: both for type of goods and brand.

3) Selling information: all details of the product such as size, color, price, use, care, etc. should be clearly presented.

4) Multiple units: aid to increasing unit sales, reducing handling costs, simplifying inventory control, etc.

5) Convenience features: such extras as pouring spouts, flap closures, single-portion sizes, etc. carry a lot of weight with consumer looking for devices making housekeeping easier.

6) Related-item sets: advantage for retailers in setting up displays and inducement to shoppers to buy staples as gifts.

7) Merchandizing: the broad concept of packaging as an attention-getter that sparks impulse sales.

In concluding his remarks Mr. Newell said: "Good packaging is the bonding agent that holds all the assets of a product in that crucial split second when a shopper makes a buying decision."

★

Continental Sales Increase

Sales and income of Continental Can Co., New York, showed a substantial increase in the first quarter of 1957, it was announced last month by Gen. Lucius D. Clay, board chairman. Net sales in the first three months of this year totaled $221,525,000, as compared with $155,766,000, in the corresponding period of 1956. Net income for the three months ended with March amounted to $7,293,000, equal to share earnings of 62 cents. This compared with $5,029,000 and 63 cents a year ago.

According to Gen. Clay, the 1956 net was before giving effect to mergers with Hazel-Atlas Glass Co., Wheeling, W. Va., and Robert Gair Co., New York.

Hazel-Atlas Names White

Appointment of William P. White, Jr., as assistant general manager of Hazel-Atlas Glass Division

William P. White, Jr.

of Continental Can Co., New York, was announced recently. Mr. White will headquarter at the division's main office in Wheeling, W. Va. He previously was vice-president of operations for White Cap Co., Chicago, a Continental subsidiary.

★

O-I Sales Increase

Sales of Owens-Illinois Glass Co., Toledo, increased slightly in the first quarter of 1956, according to financial report recently issued by the company. Net sales totaled $115,111,505, compared with $114,553,442 in the initial quarter of 1956. Net income, however, showed a slight decline in the first three months of 1957, dropping to $7,485,251, equal to share earnings of 93 cents, as against $8,139,131 and $1.02, in the corresponding quarter of the preceding year.

★

Rheem Appoints Noel

William S. Noel has been named director of industrial relations for the container division of Rheem Manufacturing Co., New York, it was announced recently by Edward F. Paquette, division vice-president and general manager. In his new assignment, Mr. Noel will headquarter at the container division's main office at Linden, N. J. Mr. Noel formerly was personnel director of Rheem's Richmond, Calif. plant. He joined the company in 1950.

★

Ferguson Names Gary

Appointment of Wayne E. Gary as vice-president in charge of eastern sales of J. L. Ferguson Co., Joliet, Ill., was announced recently by Robert L. Ferguson, president. Mr. Gary joined the firm in 1952 and was named eastern sales manager two years later. Ferguson manufactures "Packomatic" automatic packaging equipment.

★

More Tinless Cans

American Can Co., New York, will convert 65 to 70 percent of its normal output to tinless cans in 1957 should imports of tin be cut off as a result of the Suez situation, it was announced recently by William C. Stolk, president.

"This means," Mr. Stolk declared, "that virtually all our customers who suffered from Government restrictions on tin during World War II would not be affected at all by a tin shortage." He said that millions of tinless cans were already being manufactured for such non-heat processed products as polishes and waxes, cosmetics, detergents and insecticides.

"In addition," Mr. Stolk stated, "Canco has developed the technology to eliminate most of the tin from many other cans. It is called margin-plating and could save as much as 5,260,000 pounds of tin a year," he said.

★

Continental Advances Two

Benjamin C. Betner, Jr., has been appointed vice-president in charge of sales for the glass and plastics divisions of Continental Can Co., New York, it was announced recently by Thomas C. Fogarty, president. Ray C. Schenk has been named general manager of the company's Shellmar-Betner Division, Mount Vernon, O. Mr. Betner formerly was vice-president of Shellmar-Betner. Mr. Schenk previously was control officer of Continental.

VCA AEROSOL VALVES ASSURE

Sales Attention!

• ***Household Items*** • ***Hair Sprays*** • ***Deodorants***
• ***Insecticides*** • ***Garden Sprays, etc.***

VCA QUALITY FEATURES:

• Positive quality control • Unlimited production facilities • Special spray guide button (positive direction of spray) • Restricted orifices for all types of formulations • Mechanical break-up button • For cold or pressure type filling • World-wide acceptance and distribution • Qualified supplier to major national companies (over 200,000,000 valves) • **ALWAYS DEPENDABLE... ALWAYS COMPETITIVE.**

Send specifications for sample and prices.

See us at the show

VCA INCORPORATED

1720 Fairfield Avenue, Bridgeport, Conn.

Gair Division Reorganized

Robert Gair Division of Continental Can Co., New York, has been reorganized to include the manufacturing and sales activities of the company's fiber drum and paperboard divisions, it was announced recently.

George E. Dyke, vice-chairman of Continental, will serve as executive head of Gair until the selection of an executive vice-president is made. Raymond F. DeVoe, a Continental vice-president, will assist Mr. Dyke and serve as a senior consultant on financial and corporate matters. Peter P. Wojtul, vice-president in charge of the fiber drum division, will head Gair's fiber drum and corrugated box operations as vice-president and general manager.

Other new appointments resulting from the reorganization of Gair include:

Norman F. Greenway, vice-pres. and general manager in charge of boxboard and folding carton operations; William T. May, Jr., assistant to Mr. Wojtul; Charles U. Harvey, sales manager of corrugated boxes; Harold M. Walter, sales manager of fiber drums; John P. Greiveldinger, manager of manufacturing for fiber drums and paperboards; Noel A. Pease, manager of fiber drum plants; H. A. Scott, in charge of research and engineering; H. A. Bergstrom, director of research; William H. Caddoo, general production manager of boxboard and folding cartons; Jack C. Hendricks, sales manager of folding cartons; and Edward K. Mullen, sales manager of boxboards.

New district managers for corrugated boxes include:

L. B. Pitts, south, and G. W. Olson northeast. Fiber drum district managers are D. S. Thompson, central, and G. H. Scott, east. Regional sales managers of boxboard are Ernest A. Kerstein, New York; Richard H. Mirse, Boston; Theodore H. Tarbell, Great Lakes; James G. Van Horn, western region; and Andrew Mader, Jr., Pacific Coast. Regional sales managers of folding cartons include Wray H. Callaghan, east, Charles A. Colbert, west; and Homer G. Murphy, Pacific Coast.

Top officials of Owens-Illinois Glass Co., Toledo, attended the recent National Packaging Exposition in Chicago. This photograph which was taken at the Owens-Illinois exhibit, shows left to right, H. C. Laughlin, executive vice-president of Owens-Illinois, and chairman of the board of the National Container Corp., O-I subsidiary; J. P. Levis, chairman of the board; C. R. Megowen, O-I president, S. L. Rairdon, vice-pres. and marketing director.

VCA AEROSOL VALVES FOR Pharmaceuticals

ASSURE SALES APPEAL!

• Oral • Nasal • Dental • Throat Sprays, etc.

Pharmaceuticals for internal consumption, with standard inert propellents, because of VCA's controlled metered valves, which measure accurately to within plus or minus 10% of guaranteed dosage are now possible.

A few examples:

A The button applicator takes a new look. Spray guide makes this aerosol most effective.

B This is the famous RIKER MEDIHALER for asthma relief, featuring the VCA metered valve that delivers the correct dosage.

C Finger tip control operates the molded plastic tube for a metered spray. When not in use, cap and tube become one, for positive closure.

D Here's one for the nasal. Clever cap arrangement has multiple advantages for a variety of uses.

E Here, too, plastic is a means-to-an-end, when coupled with a VCA metered valve. Simple operation.

VCA HAS A VALVE FOR YOUR NEED

See us at the show

VCA INCORPORATED

Send specifications for sample and prices.

1720 Fairfield Avenue, Bridgeport, Conn.

Standardize Steel Cans

Steel pails, drums and utility cans made by Continental Can Co., New York, are now being manufactured in accordance with size standards established by the Steel Shipping Container Institute and major industries served by these products, it was announced recently. Containers affected by this program are 2½ to 6½-gallon lug cover pails, five and six-gallon closed head drums, and 2½, five-gallon and 40-pound utility cans. The latter containers, produced in Continental's Pittsburgh and Chicago plants, will now be made with an inside body diameter of 11¼ inches.

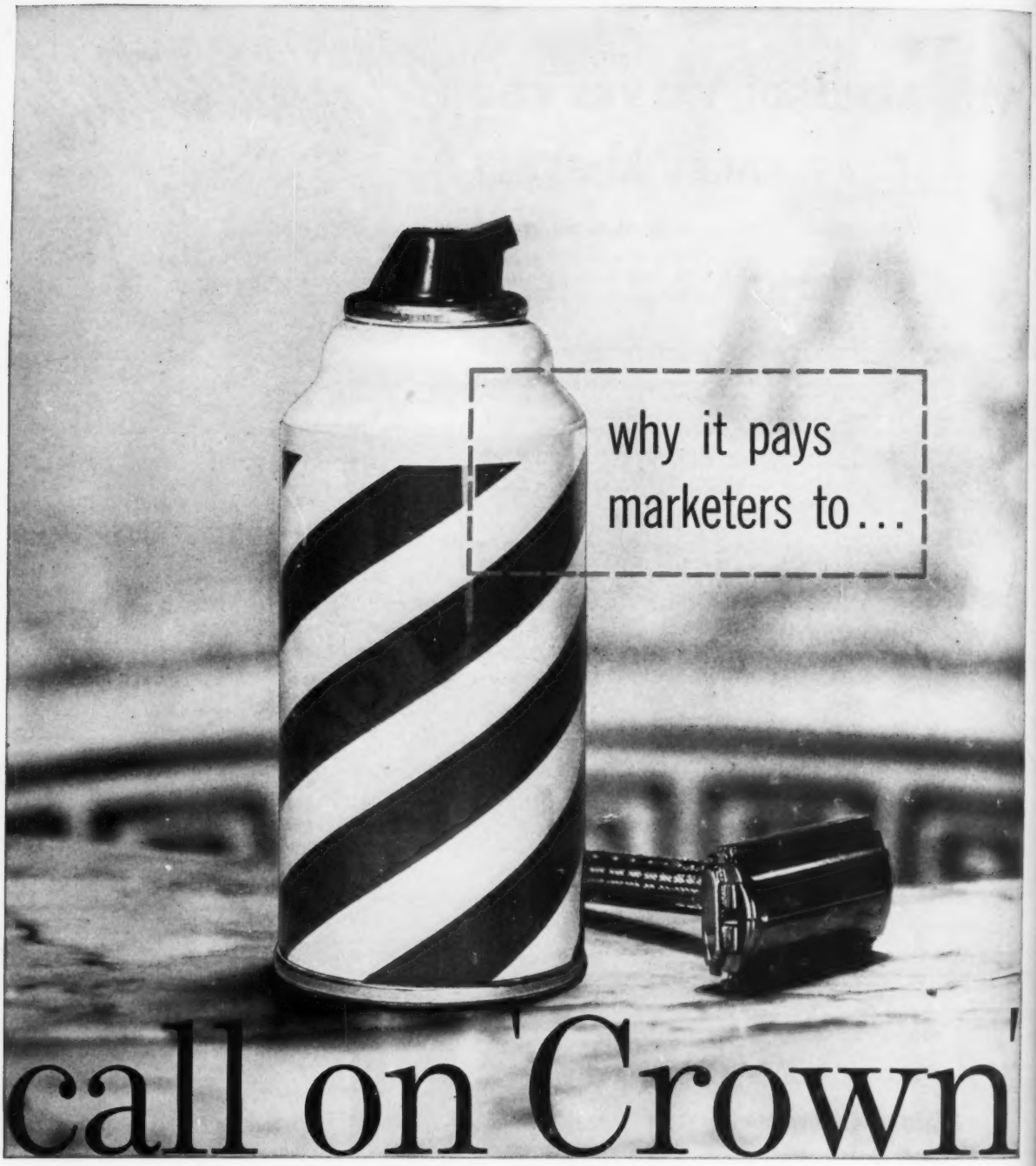
New point-of-sales display unit for "Tartan" sun tan cream examined by Gordon Riha, left, art director for McKesson & Robbins, Fairfield, Conn., distributors of "Tartan," and Henry E. Griffith, vice-president in charge of sales for Bradley Container Corp., Maynard, Mass. Bradley designed the display and supplies "Tartan" plastic tubes.

★

Record Paper Box Sales

Sales of folding paper boxes reached a record $900,000,000 last year, according to Norman F. Greenway, president of the Folding Paper Box Association of America, Chicago.

Dollar volume for 1956 rose an estimated seven percent from the previous year, Mr. Greenway said, although total tonnage of board used remained about the same as in 1955. He attributed the 1956 increase in dollar volume of sales to the retail trend of self-selection and the rising demand for products in new end-use categories such as beverages, paper goods and cigarettes. Self-selection, he added, has caused a shift to higher quality boxes with more colorful design, better quality board, and unusual carton features.



Spra-Tainer, the first "throw-away" pressure package, set new standards of design efficiency and convenience.

The extra strength of Spra-Tainer gives marketers a wider choice of propellants. Unique "no side seam—no top seam" construction permits uninterrupted inside coatings for best product protection. Crown's "wrap around" lithography gives marketers that vital extra spark at the point-of-sale.

Crown also provides authoritative facts on the adaptability of a product to pressure packaging ... on pertinent Government and ICC regulations ... on propellants, valves and contract loading facilities as well as the loading equipment itself.

You will find that this "one company responsibility" in pressure packaging pays real dividends when you ... *call on Crown.*

CROWN CORK & SEAL COMPANY, INC., PHILADELPHIA 36, PENNA.

TIME-TESTED AND PROVEN:

THE ALL NEW AR-74 AEROSOL VALVE

solves many problems that have existed to this very moment!

One of four different AR-74 spray tips for atomizing, residual spray, mechanical break-up or foam.

INTERNAL METERING ELIMINATED!

All Metering in Removable Nylon Spray Tip

Aerosol Research Company . . . the originator of the first fast pressure-fill aerosol valves . . . now introduces the AR-74 . . . a new, improved type of aerosol valve for COLD *and* PRESSURE filling. Backed by years of development, the advancements built into the AR-74 satisfy needs that have existed since pressurized packaging began. Listed are a few of the many features that can improve your operation:

- **VARIETY OF SPRAY TIPS**—Available in various meterings for true and residual aerosols and foam products.
- **NEW MIST-MIZER TIP**—Available for ultra low-pressure and water-base spray formulations.
- **ALL NYLON SPRAY TIP**—Stays on, will not loosen from chemical reactions.
- **NO INTERNAL METERING**—Containers are virtually clog-proof!
- **EACH VALVE AUTOMATICALLY TESTED** by Automation to eliminate human factor.

FOR PRESSURE FILLING

the AR-74 gives you these extra advantages:

- **WORLD'S FASTEST FILLING**—There is no internal metering in lower assembly so valve is literally "wide-open"!
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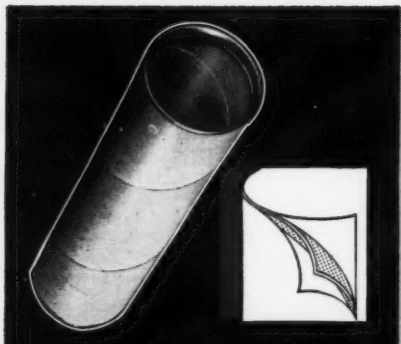
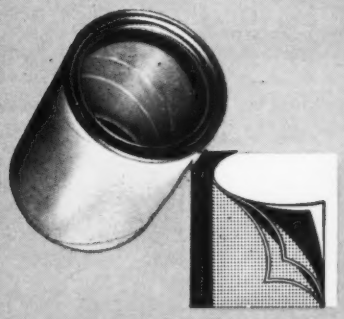
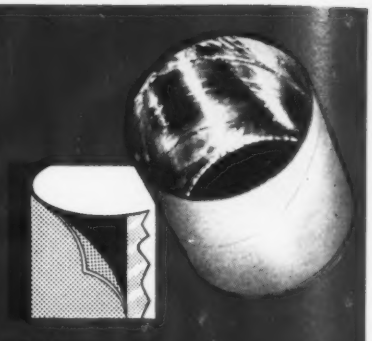


LARDPAK LINER.
Lardpak liner inside, then fibre, and printed Lardpak paper used outside. A grease barrier for scores of materials. Example of use: caulking compounds.

LARDPAK, PITCH-BACKED.
This combination offers the packer both grease and moisture resistance. Example of use: various chemicals.





• There are many sides

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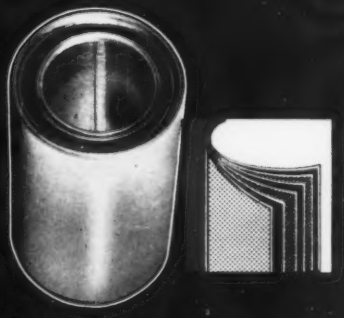

CHIP KB.
Pitch layers between layers of fibre, for moisture resistance. Convolute can shown here. Example of use: wallpaper cleaner, cold water paints.

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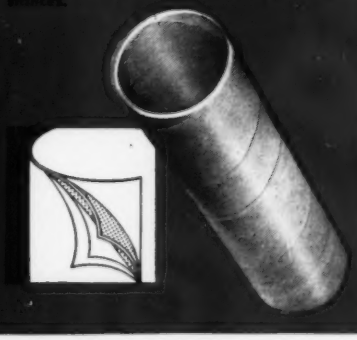
Contact your nearest R. C. Sales Office for experienced advice. There's no obligation.

PARAFFIN COATING.
Parrafin lining obtained two ways: spiral wound from coated fibre, or sprayed in convolute can. Example of use: moth crystals, drugs, etc.



FOIL PAPER-BACKED.
Foil backed up by 20 lb. white bond paper, which serves as inside ply of container. Ideal for packaging that requires both moisture and grease resistance. Example of use: ready-to-heat biscuits, and similar food products.

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What's New?

A new wax-based, liquid shoe polish has been added to the "Esquire" line made by Knomark Mfg. Co., Brooklyn, N. Y. Tradenamed "Lanowax," it is applied with a dauber inserted in the cap of the bottle. No brushing or buffing is required, according to the manufacturer. The new polish contains lanolin, comes in a non-tip glass bottle by Pierce Glass Co., Port Alleghany, Pa., and retails for 25 cents. "Lano Wax" is available in seven colors.

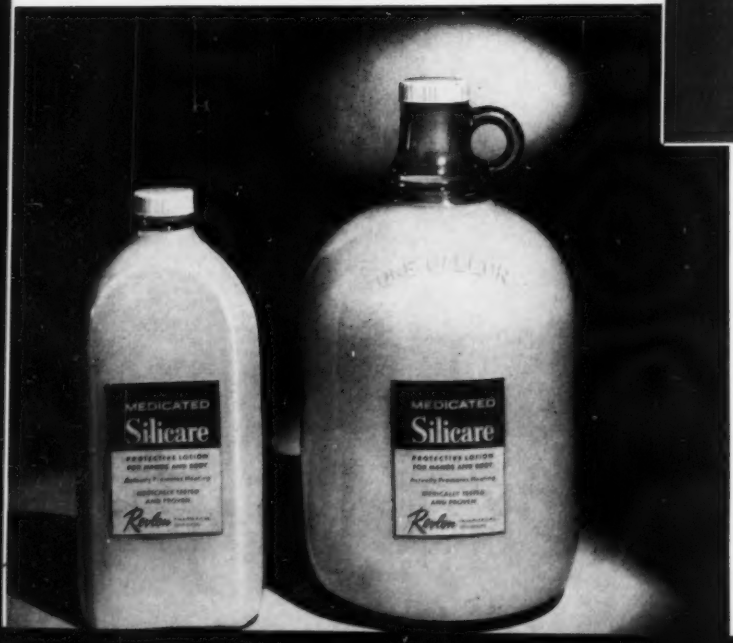
"Silver Dollar," a new wick-type air deodorizer for household use and in automobiles is now being marketed by Abbey Chemical Co., Providence, R. I. The product is packaged in a new blue, three-ounce bottle made by Maryland Glass Corp., Baltimore. "Silver Dollar" retails for $1.00. Counter display stand in matching blue and silver is available to display product.

The availability of its "Raid" insecticide in commercial and institutional size packages was announced recently by S. C. Johnson & Son, Inc., Racine, Wis. "Raid," was introduced about a year ago, packaged in a 16-ounce aerosol can. It is now also packaged in one, five, 30 and 55-gallon containers for use in sprayers. The product contains pyrethrins and a synergist.

A new technique in merchandising its "Dot" cleanser has been adopted by Wilbert Products Co., New York. The company now offers product in a new can-band carton designed and engineered by Container Corp. of America, Philadelphia. New package, which holds three cans of "Dot," also serves as advertising medium for Wilbert's premium offer, which according to company officials, has doubled product's sales. New packages with new copy and artwork are printed for each "Dot" three-month premium offer.

A new waxless floor finish, "Fashion Plate," announced recently by Betco Corp., Toledo, O., is designed for use on all types of flooring. Product is said to form a hard, non-slip finish that can be buffed without darkening floor surface. It is also claimed to have good removability and high gloss and is marketed in one, five, 15, 30 and 55-gallon containers.

Revlon, Inc., New York, has announced the marketing of its "Silicare" medicated hand lotion in commercial and institutional size containers. Designed to protect, heal and soften the skin, "Silicare" now comes in quart and gallon packages. According to the manufacturer, the product may remain on hands through five ordinary washings and still render protection.



Miller Chemical & Fertilizer Corp., Baltimore, has adopted a new polyethylene squeeze container by Bradley Container Corp., Maynard, Mass., a subsidiary of American Can Co., for marketing its new malathon flea killer, which is designed for use on dogs and cats. Container, which is also utilized for the company's complete line of garden insecticides, has polyethylene walls, metal ends, a captive closure, and can spray material up, down or sideways when pressure is applied to sidewalls. Flea container features black, yellow and red printing on a white background.

A new all-purpose cleanser with bleach added, was announced last month by White King Soap Co., Los Angeles. Said to clean instantly without leaving a residue, the new product comes in a newly-designed container that can be transformed into a foil-wrapped package free from advertising. Solid color foil undercoating comes in pink, yellow and turquoise, shades designed to match modern kitchen and bathroom color schemes. Container has a rust resistant base that protects porcelain against stains.

A new line of automotive products was announced last month by National Carbon Co., New York, a division of Union Carbide and Carbon Corp. The products, a new car wax, car polish and car wash, will be marketed under the "Prestone" label and will retail for $2.00, $1.75 and 75 cents, respectively. Feature of the polish can is a flip top dispenser, which is said to minimize waste and permit the proper amount of material to be dispensed.

Helene Curtis Industries, Inc., Chicago, has adopted a new aerosol container by Continental Can Co., New York, for marketing its lanolin hair spray, "Spray Net." The new cylindrical-shaped package is of gold color, enmeshed in a design of black net. Valve is by Precision Valve Corp., Yonkers, N. Y. G. Barr and Co., Chicago, is the filler. Label is provided by Reynolds Metals Co., Louisville. "Spray Net" comes in two, 4.5 and 11-ounce aerosol containers, which retail for 69 cents, $1.25 and $1.89, respectively.

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Plastic Aerosol Bottles

Precision Valve announces availability of license arrangements on nylon containers it has developed

By Robert H. Abplanalp and Joseph C. Pizzurro, Precision Valve Corp., Yonkers

ONE of the pressing needs of the aerosol producer has been a suitable container for packaging of anti-perspirants, deodorants, colognes and other products causing corrosion of metals. This material would require an unusual combination of characteristics. It would have to be rigid, non-permeable, lightweight, of low cost, and of course non-corroding. Research was undertaken on the two most likely materials, glass and the heterogeneous group headed "plastics." Glass was the most likely contender since it fulfilled all the requirements. In addition, however, one of its major characteristics offered a serious drawback; the potential danger of breakage. The container being under pressure constituted a serious hazard of flying particles. This hazard has been reduced in two ways; first by the reduction of the pressures in the container to 12 to 15 psig through the use of "Freon 114," and secondly, by coating the outer surface of the glass container with a protective plastic which allowed pressures of 15 to 25 psig to be used. Both of these methods have been used successfully for the past two years.

Plastics, however, seemed to offer the broadest field for further research, being light in weight, inert and lacking the potential breakage hazard. In 1953, Precision Valve Corporation started investigations in this field, despite the lack of encouragement by the manufacturers of the plastic material proposed for use. Injection molding was picked as the manufacturing method for practical reasons. Nylon was selected as the material, because of its rigidity, light weight and high resistance to chemical attack. These features appeared to outweigh the relatively high cost of the raw material, particularly since it was felt that a nylon container could be constructed with a wall thickness of only .025", thus reducing the quantity of raw material required.

The specific nylon chosen was "Zytel 101." Nylon, was originally a du Pont trade name for the polyamide group of plastic resins. Since then nylon has become the generic term for this group and du Pont has created the new trade name "Zytel" to replace it. "Zytel 101" is du Pont's designation for an injection molded grade of nylon, while "Zytel 42" is their designation for the extrusion molded grade. In essence these two grades are the same with the exception of their viscosity. "Zytel 42" exhibits the higher viscosity and therefore a slightly higher molecular weight.

Container Design

THE design of the container became the next consideration, and to expedite the research a single shape was decided upon. This design had to be aesthetic as well as structurally sound and practical for molding. The most acceptable design was tubular with an open bottom and provision for center extrusion at the top to accommodate the valve assembly.

The problems at this stage of the development were manifold and disheartening. The first attempts at molding containers failed. But the failures were the starting point for a long series of mold modifications, temperature, pressure and cycling changes which eventually produced correct cavity fillout. When the first group of containers were successfully completed and pressure packed, it was found that structural modifications were necessary since there was among other things excessive distortion. The valve assembly as well as the overall appearance was affected by the distortion. At the same time a solution to the problem of how to assemble the nylon bottom to the container had to be worked out.

Many months were spent in attempts to assemble bottom and container. Heat sealing methods were developed and discarded because in every case these closures were neither positive nor stable. Finally, a steel ferrule was employed which acts as a clamp for securing the bottom to the container. Since the steel is outside the container, it does not come in contact with the contents and its corrosive characteristics do not come into play. It is also a highly decorative feature since it can be plated in a variety of colors to complement the labeling and enhance the overall appearance. The ferrule has

other practical advantages in that it is magnetic and eliminates the requirement for carrying pucks while leak testing in the water bath.

Test Procedures

NOW, Precision Valve was ready for the testing procedures. How much pressure could this container hold? Was there a problem of propellant, product or perfume permeability with nylon? What was the product compatibility? First, it was attempted to determine bursting pressures. A fixed propellant blend was used and the containers were stored at varying oven temperatures. They were kept at each temperature for a period of 24 hours, then raised to the next temperature. It was discovered that containers with a wall thickness of .030" could withstand pressures of 170 psig while in an ambient of 160°F.

For permeability, a new set of testing methods had to be developed, since preliminary trials showed that ambient conditions greatly affected results. For example, when anhydrous alcohol was placed in the container, its weight variations were directly dependent on the outside humidity. We wanted our tests to give a true relationship between the ingredient and the nylon container not influenced by the ambient. In addition, we wanted to discover weight variations that might be incurred under field storage conditions. Therefore, two separate methods of testing had to be worked out.

First, the true relationship test – this was accomplished by storing the containers to be tested in dessicators containing silica gel, thus assuring the absence of moisture. We called these the "dessicator tests."

Field Tests

SECOND, the field condition tests. These were accomplished by placing the test units on window shelves where they would be subject to the widest variety of temperature and humidity. The actual recordings indicated a temperature variation from 50°F. to 110°F. and a humidity variation of 50% R.H. to 90% R.H.

The initial tests on containers with .030" wall thickness showed that the permeability of water based products such as shave cream was high. Approximately 24 grams per year being lost. This result was expected to a certain degree because of the known effects of water on nylon. The alcohol based products, such as hair lacquers and colognes, turned out very well. They showed permeability losses of about one gram a year. A very important test was permeation measurement of perfume oils. Samples of containers were sent to Givaudan - Delawanna, Inc., New York, where they were packed with various products containing perfume odors of all types and degree. One year's results indicated no evident loss of perfume odors or parts thereof.

Test Results

THE results indicated that the containers were well suited for aerosols with the exception of those which were water based or partially water based. Since water based products are a large portion of the

Table I. Comparison of aerosol shave cream and shampoo packed in "Zytel 101" and "Zytel 31" containers having 0.030" wall thickness.

Product	% Freon 114	% Freon 12	Zytel	Temperature Degrees F.	Weight Losses 1 Month	2 Months	3 Months	6 Months
Shave Cream	60	40	31	Low	0.26g.	0.74g.	0.99g.	1.58g.
Shave Cream	60	40	31	High	0.34	0.98	1.26	1.88
Shave Cream	70	30	31	Low	0.25	0.73	0.97	1.56
Shave Cream	70	30	31	High	0.34	0.96	1.26	1.94
Shave Cream	80	20	31	Low	0.22	0.67	0.91	1.47
Shave Cream	80	20	31	High	0.31	0.86	1.14	1.73
Shave Cream	60	40	101	Low	1.89	4.83	8.68	10.15
Shave Cream	60	40	101	High	2.36	6.16	9.64	11.33
Shave Cream	70	30	101	Low	1.95	4.67	8.64	10.09
Shave Cream	70	30	101	High	2.26	5.80	9.53	11.33
Shave Cream	80	20	101	Low	1.77	4.82	8.11	9.49
Shave Cream	80	20	101	High	2.06	5.63	9.22	10.57
Shampoo	90	10	31	Low	0.32	1.04	1.96	2.42
Shampoo	90	10	31	High	0.48	1.47	2.62	3.19
Shampoo	80	20	31	Low	0.39	1.15	2.12	2.62
Shampoo	80	20	31	High	0.56	1.63	2.86	3.47
Shampoo	70	30	31	Low	0.34	1.09	2.04	2.28
Shampoo	70	30	31	High	0.55	2.66	2.92	3.52
Shampoo	90	10	101	Low	1.96	5.41	9.73	11.61
Shampoo	90	10	101	High	2.56	7.18	12.15	13.92
Shampoo	80	20	101	Low	2.03	5.85	9.79	12.24
Shampoo	80	20	101	High	2.74	7.64	12.67	14.98
Shampoo	70	30	101	Low	2.21	6.32	10.30	12.79
Shampoo	70	30	101	High	2.94	7.99	13.55	16.06

Product	Formula	Weight Losses				
		1 Month	2 Months	3 Months	6 Months	1 Year
Shave Cream	90% Concentrate 10% Freon 12-114 (40-60)	0.22g.	0.77g.	1.32g.	4.21g.	8.13g.
Shampoo	90% Concentrate 10% Freon 12-114 (40-60)	0.13	0.55	1.04	4.25	8.87
Hair Lacquer	30% Concentrate 70% Freon 11-12 (65-35)	0.08	0.10	0.09	+0.06	0.29
Anhydrous Alcohol Cologne	50% Concentrate 50% Genetron 101	0.09	0.11	0.09	+0.11	+0.10
Anhydrous Alcohol Cologne	50% Concentrate 50% Freon 12-114 (20-80)	0.05	0.05	0.01	+0.35	+0.44
95% Alcohol Cologne	50% Concentrate 50% Freon 12-114 (10-90)	0.05	0.10	0.12	0.87	3.00
Water-Alcohol Deodorant	70% Concentrate 30% Genetron 101-320 (30-70)	0.05	0.09	0.12	0.79	2.85
Aluminum Chlorohydrol Antiperspirant	70% Concentrate 30% Freon 12-114 (40-60)	0.04	0.05	0.08	0.10	2.58
Room Deodorant	25% Concentrate Freon 11-12 (50-50)	0.05	0.04	0.06	0.12	0.16
Control		0.08	0.08	0.07	+0.01	0.07

Table II. Field condition test results of propellants packed in 0.050" walled "Zytel 101" containers.

field for which the container was being developed (shave creams, hand lotions, shampoos, etc.) our next step was to cut down the water permeability. Theoretically this could be accomplished by increasing the wall thickness, but this would place the container in a non-competitive price class because of high raw material costs. Chemical treatment of the container was the next step. Treatments with ingredients such as glycerine, glycerine and water, mineral oil, mineral oil and water, glycols, stearates and many others were attempted all in the hope of impregnating the container walls with some ingredient which would tend to slow down the water permeation to an acceptable degree. All failed to reduce permeability sufficiently to be practical in use. Other methods such as vacuum metal plating and lining walls with non permeable materials were considered but abandoned due to the prohibitive costs.

At this point it was necessary to investigate the possibility of using a different plastic material for the container. It was discovered that "Zytel 31" was much less affected by water than "Zytel 101." Containers were then made of "Zytel 31," packed with water based products and tested. The tests were made with shave cream and shampoo packed in a 90 per cent concentrate, 10 per cent propellant ratio. Three different propellant combinations were used:

(1) "Freon 12" (40%)
"Freon 114" (60%)
(2) "Freon 12" (30%)
"Freon 114" (70%)
(3) "Freon 12" (20%)
"Freon 114" (80%)

These test units were stored on window shelves, with one complete set being subjected to higher temperatures than the other. The results are shown in Table I. They indicate that higher pressures, caused by the propellant or increased heat are a direct cause of increased permeation.

Although "Zytel 31" is less affected by water than "101," alcohol has a more pronounced effect on "31." Subsequent tests with combinations of water and alcohol showed an acceptable range of permeability, but there was a serious distortion in the "Zytel 31."

The problem of high water permeability also caused sidewall distortion. Changes in sidewall construction were made, and at the same time the use of fiberglas filled nylon was investigated to remedy the distortion problems. After many months of experimentation it was decided to increase the side wall thickness to .050" in spite of the higher costs because more raw material was required. Subsequently there was a price decrease in "Zytel," which fortunately offset the increased quantity of material.

The initial results with .050" wall thickness showed great promise. They indicated a considerable reduction in permeability as well as a tremendous reduction in distortion. Various aerosol products were packed in the new container and run through the field condition tests. One year's results are indicated in Table II. In addition, field condition tests were started for various propellants. These results are illustrated in Table III. Dessicator tests which were run simultaneously indicated the same trend after one year's testing as those results listed. As shown, water permeation through the thicker wall was greatly reduced. Further, there was very slight, if any, side wall distortion. The new containers were also found to be much more shock proof. Results of tests run independently by firms interested in merchandising this type container in general corroborate the foregoing information.

The overall results gained from the Precision Valve Corporation's tests show that containers of nylon are practical for the pressure packaging of many products. We

feel that it can be concluded that containers of "Zytel 101" are best suited for alcohol based products, but can also be successfully used with water based products, or water and alcohol products. However, if the particular water based products appear to give excessive losses, "Zytel 31" can be successfully used as the container material.

An exhibition demonstrating the striking practical aspects of manufacturing containers by the process of injection molding, was given recently at the Packaging Exposition in Chicago. While the containers involved were styrene ice cream containers and not pressure vessels, the demonstration was still significant in as much as the same equipment demonstrated can be readily adapted to produce nylon pressure containers at a rate of 40 cans per minute from a single four cavity mold. This clearly defines the economic advantages of this type of production system.

Precision Valve Corporation originally undertook this development with two objectives in view: (1) The successful development of this type of container would certainly broaden the valve market. (2) It was possible that Precision, with a container of its own manufacture, could supply the demand for same in the industry. Both these objectives have been actively pursued during the past four years; however, because of the pressing requirements of expansion in the valve field, Precision has recently decided to license its own process to other firms.

Precision is prepared to continue its present development to the point of commercial production of up to 75M containers per day. However, they propose to do this only as a pilot operation for purposes of demonstration to other manufacturers interested in the plastic pressure container field. Precision's strongest interest at present is to assist these same manufacturers in terms of information on molding procedures, research data, etc., to develop as rapidly as possible actual commercial production facilities for the manufacture of this type container with licensing arrangements under PVC patents. Precision will be happy to make the complete results of their tests and research available to those concerns seriously interested in the pursuit of this project.

—★—

Folding Box Assn. Elects

Norman F. Greenway, vice-president and general manager of the boxboard and folding carton division of the Robert Gair Division of Continental Can Co., New York, was re-elected president of the Folding Paper Box Association at the group's annual convention held last month in Chicago.

Elected to serve with Mr. Greenway on the executive committee were:

William J. Alford III, Alford Cartons, Ridgefield Park, N. J.; William B. Leavens, Jr., Wilkata Folding Box Co., Kearny, N. J.; Arthur N. Morris, Newth-Morris Box Corp., Jacksonville, Fla.; Bayle M. Richardson, Richardson Taylor-Globe Corp., Cincinnati; Leo H. Schoenhofen, Container Corp. of America, Chicago; and William H. Walters, U. S. Printing & Lithograph Co., Cincinnati.

Elected directors for the coming year were:

Mr. Alford; R. W. Anderson, Fisher Paper Box Co., Minneapolis; Noble Andre, Andre Paper Box Co., San Leandro, Calif.; James N. Andrews, Ohio Boxboard Co., Rittman, O.; A. W. Buchanan, F. N. Burt Co., Inc., Buffalo, N. Y.; R. F. Burroughs, Sr., Trenton Folding Box Co., Trenton, N. J.; Joseph D. Caimi, Associated Folding Box Co., Lawrence, Mass.; Walter F. Daley, New Haven Board & Carton Co., New Haven, Conn.; Leonard Dalsemer, Lord Baltimore Press, Baltimore; D. W. Dehoney, Jr., Gaylord Container Corp., a division of Crown Zellerbach Corp., St. Louis; Raymond E. Farrar, Ace Carton Corp., Chicago; W. W. Fitzhugh, Jr., William W. Fitzhugh, Inc., New York; D. A. Forsberg, Forsberg Paper Box Co., Madison, Wisc.; Colin Gardner, Gardner Board & Carton Co., Middletown, O.; Mr. Greenway; Dan Int Hout, Michigan Carton Co., Chicago; R. D. James, American Box Board Co., Grand Rapids, Mich.; J. R. Kennedy, Federal Paper Board Co., Bogota, N. J.; W. H. Kewell, Los Angeles Paper Box & Board Mills, Los Angeles; L. D. La Touttette, Jr., Consolidated Paper Box Co., Los Angeles; Mr. Leavens; Charles R. Liebman, National Paper Box Co., Atlanta, Ga.; Mr. Morris; E. J. Mulholland, Chicago Carton Co., Chicago; Douglas T. Neale, Edwin J. Schoettle Co., Philadelphia; Robert C. Neff, Gebhart Folding Box Co., Dayton, O.; T. V. Nevins, Jr., Nevins Co., Clifton, N. J.; R. G. Paramore, Central Fibre Products Co., Quincy, Ill.; Ralph A. Powers, Robertson Paper Box Co., Montville, Conn.; W. Race, Sutherland Paper Co., Kalamazoo, Mich.; Mr. Richardson; Paul A. Schilling, Waldorf Paper Products Co., St. Paul, Minn.; Ralph Schnitzer, Magnolia Paper Co., Houston; Mr. Schoenhofen; John F. Sherman, Carton Service, Inc., Shelby, O.; and Mr. Walters.

—★—

Visit VCA Aerosol Unit

American aerosol valve production concepts and techniques were studied by F. P. Webster and Major C. R. Dibben, British aerosol valve manufacturers, on a recent visit to the Bridgeport, Conn., manufacturing facilities of Valve Corp. of America, it was announced recently by Philip H. Sagarin, VCA president. Both men are affiliated with Specialty Valves, Ltd., Wolverhampton, England, producers of VCA patented valves for sale in England and Europe.

—★—

ADM Advances Woodward

Appointment of George P. Woodward as sales manager of the Philadelphia district of Archer-Daniels-Midland Co., Minneapolis, was announced recently by James W. Moore, ADM vice-president and director of marketing. For the past several months, Mr. Woodward has served as acting manager of the Philadelphia district. He joined ADM in 1941 as a sales representative.

Table III. Field condition test results of propellants packed in 0.050" walled "Zytel 101" containers.

Ingredient	Weight Losses				
	1 Month	2 Months	3 Months	6 Months	1 Year
Freon 11	0.08g.	0.14g.	0.13g.	0.15g.	0.38g.
Freon 12	0.10	0.14	0.15	0.03	0.27
Freon 11-12 (50-50)	0.06	0.10	0.11	0.15	0.23
Freon 114	0.04	0.08	0.08	0.04	0.20
Freon 12-114 (40-60)	0.04	0.06	0.05	+0.09	0.03
Genetron 101	0.07	0.12	0.14	0.14	0.30
Genetron 226	0.04	0.07	0.07	0.00	0.11
Genetron 320	0.05	0.07	0.07	0.05	0.25
Genetron 226-320 (50-50)	0.09	0.15	0.14	0.12	0.30
Control	0.05	0.08	0.07	0.05	0.06

Webster in New Post

Robert C. Webster has joined Western Filling Corp., Los Angeles, as general manager of its

Robert C. Webster

newly-formed pressurized food division, it was announced recently. In his new post, Mr. Webster will supervise custom pressurized packaging of food products. He formerly was a research engineer at the metal research and development laboratories of Continental Can Co. in Chicago. While at Continental, Mr. Webster was engaged in development of pressurized food containers.

★

Continental Names Devere

Appointment of F. Guild Devere as manager of sales and operations of metal specialties and decoware containers of Continental Can Co., New York, was announced recently by Orren R. McJunkins, vice-president. In his new post, he

F. Guild Devere

Bracon . . . SQUEEZE-TO-USE PACKAGING

Caught in a Squeeze?

Just supposing you were caught on evening KP. You would be discovering that GLIM, all-purpose liquid detergent packed in a squeeze can, made dishwashing and other household cleaning easier than ever before. Convenient? A gentle squeeze to the pliable polyethylene puts just the right amount of liquid GLIM where you want it . . . no measuring—no pouring—no caps to fuss with.

GLIM is now underway with total conversion to the BRACON 2ME* squeeze can. Starting in selective markets a few months ago, B. T. Babbitt found more women expressed preference for the squeeze can. Grocers responded to their stackability, quick turnover and merchandising appeal. High speed filling and shipping economies (they're lighter) help to keep GLIM's prices competitive.

If you have a merchandising problem that could stand a packaging pick-up, don't wait for the squeeze. Let us show you what a BRACON squeeze-to-use can, tube, or bottle could do for you. Write for details.

*World wide patents, exclusive manufacturers.

BRADLEY CONTAINER CORPORATION

Maynard, Mass.—*New York, Chicago, Los Angeles, Toronto*

will direct sales programs on these product lines and will supervise manufacturing operations at Continental plants in Baltimore and Passaic, N. J. The metal specialties line includes containers for cleanser, pharmaceuticals and other dry line products.

—★—

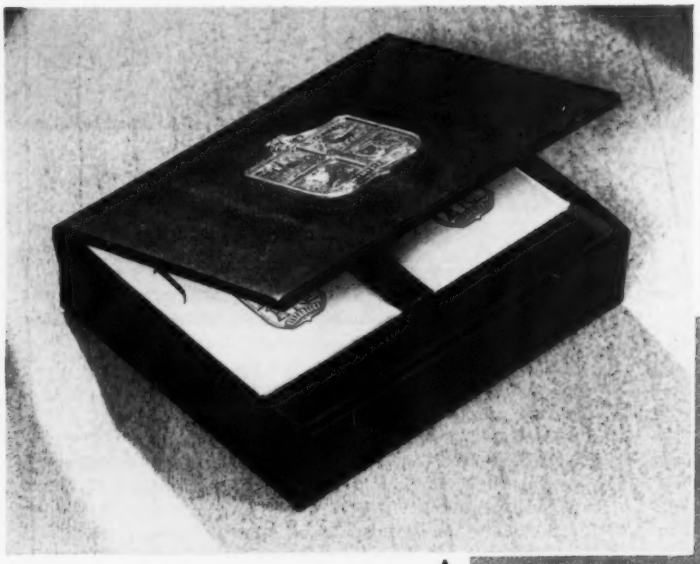
New Plastic Container

A new polyethylene container for liquid detergents and cleaning compounds, liquid starch, industrial chemicals, laboratory reagents and many types of inks, was introduced recently by Hedwin Corp., 1600 Roland Heights Ave., Baltimore. Made from du Pont "Alathon" polyethylene resin, the container, called "Cubitainer," features a molded-on spout and is made for use within a corrugated shell. A cut-out handle is designed in the paperboard box to aid in dispensing. The new product is claimed to be light of weight and chemical resistant and is shipped to the packager in collapsed form. The polyethylene inserts are then inflated, filled and closed by a heat sealing process. The spout, which is easily snipped open, can be closed with a plastic clip for reuse.

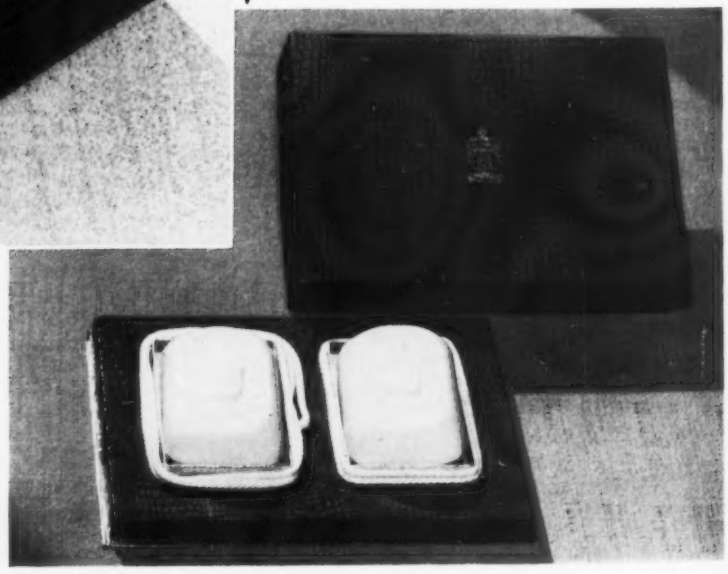
New container of du Pont "Alathon" polyethylene resins with molded on spout is designed for use within a paperboard shell and can be used for many different types of liquids.

Struthers Appoints Two

W. F. Struthers and J. E. Gardner have been named treasurer and manager, respectively, of John Struthers and Co., Ltd., Montreal, aerosol loaders, it was an-



Two soap packages were among the 87 award winners in the seventh annual Set-Up Paper Box Competition, sponsored by the National Paper Box Manufacturers Association, Philadelphia. Winners were announced May 2, during convention of the association in Miami Beach, May 1-5. Of the 28 first awards voted, one went to the "His and Her" soap box of House of Men, Inc., Chicago. Box was made by Williams Brothers Paper Box Co., St. Joseph, Mich. It is described as "handsomely bound in red lizard paper." "Gold stamped lid of unusual gift box is lined with a protective padding. The gold extension edge of the base frames an interior platform cover in red lizard paper in which gold foil wrapped trays display two cakes of soap to great advantage."



A second award winner in soap, "Jardin" soap gift box of DuBois Co., Cincinnati. Box was produced by William Koehl Co., Cincinnati. It is "effective as a medium of advertising," in the opinion of the judges. The box, which is covered in leatherette, is used as a gift item for customers. The judges also stated that "its sturdy and handsome construction encourages the reuse of this box, while the embossed gold seal on the hinged lid, trademark of the company, provides a subtle reminder of the donor." Selections in the competition were made from the equivalent of over 2,500 entries by a seven man panel of packaging, merchandising and design experts.

J. E. Gardner

nounced recently. Mr. Struthers for many years was Canadian general manager for Gourock Ropework Export Co., Ltd. Mr. Gardner previously was associated with Johnson & Johnson, Ltd., in a sales capacity. The Struthers concern recently moved to new and enlarged quarters at 5581 Pare St. in the Town of Mount Royal, Montreal 16, Quebec. It formerly was located at 3081 Ontario St., East, Montreal 4.

★

New Label Paster Line

A new line of label pasting machines was introduced recently by Better Packages, Inc., Shelton, Conn., manufacturers of a complete line of closure equipment. Called "Counterboy," the line features 14 new models of the manual, electric and automatic feed variety which handle labels from one half to 18 inches in width. A special coating control is claimed to regulate the application of glue to the label and eliminate warping, blisters, wrinkles, and the oozing of paste at the label's edge.

W. F. Struthers

★

Continental Names Michaud

John C. Michaud has been elected vice-president of the container board and Kraft paper division of Continental Can Co., New York, it was announced recently by Gen Lucius D. Clay.

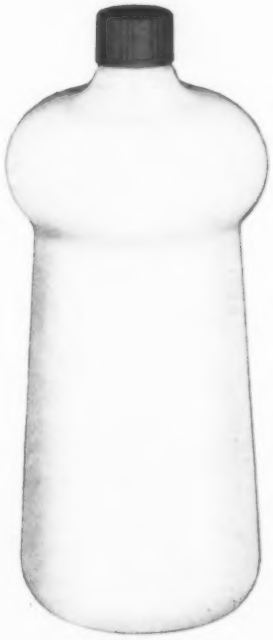
In his new post, Mr. Michaud will be in charge of the firm's plants at Port Wentworth, Ga., Hodge, La., and Hopewell, Va. Mr. Michaud formerly was manager of the Hodge unit. He previously had been a director of Robert Gair Co. and vice-president of Southern Advance Bag and Paper Co.

The two concerns were merged into Continental last October.

NEW "*FEATHERWEIGHT*" UNBREAKABLE BOTTLE ...90% LIGHTER THAN GLASS...100% SAFER!

NOW AVAILABLE IN 16 OZ. SIZE

(as well as the popular 32-oz. size)



This new amazing one-piece seamless container is blow-molded of "paper-thin" *unbreakable* polyethylene, scientifically designed for better and more economical packaging!

√ ***Check these PLUS features:***

√ **SAVE ON SHIPPING COSTS**
This unbelievably light container is actually 90% lighter than its equivalent in glass...tare weight is drastically reduced!

√ **LOWER PACKING COSTS**
The new "*Featherweight*" bottle can even be used to ship highly corrosive acids in *standard corrugated cartons* (I. C. C. Approved) with less and lighter internal packing...another cost-saving factor.

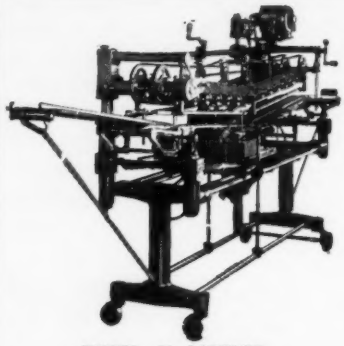
√ **SAFER TO SHIP AND USE**
Completely unbreakable...danger and loss because of a broken container is gone forever! Polyethylene plug insert gives double protection against leakage.

√ **ADAPTABILITY**
The "*Featherweight*" bottle is squeezable. Simple standard components convert this unique bottle into a complete ready-to-use package that will eject a fine spray, release liquids drop by drop or dispense fluids in measured quantities. No propellents are required.

Available plain or with colorful, silk screened private label imprint.

WRITE FOR FREE SAMPLES

Developed and Sold Exclusively by
NORTHWESTERN BOTTLE COMPANY
3144 North Broadway *(Container Division)* **St. Louis 7, Missouri**



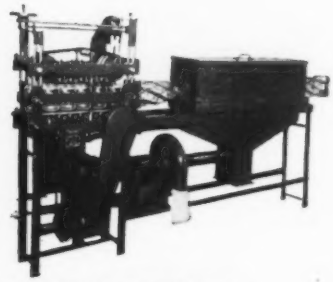
MODEL V LABELER

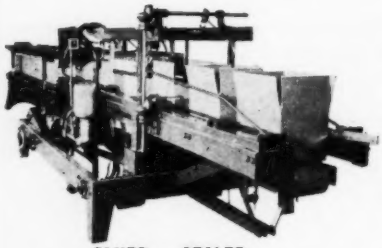
NEW WAY LABELER

For all types of AEROSOL CANS — filled or empty — with or without caps — right or left hand lap labels. Same machine capable of handling standard sanitary cans, glass jars and/or bottles and screw top containers. Write for particulars on a machine to handle your containers — bulletin SC-1580

CRCO JAR CLEANING LINE

Will blow loose dirt out of *Aerosol* cans, many types small neck bottles, and wide-mouth glass or tin containers. Other models available for water or steam to rinse or flush containers. Write for Bulletin SC-1493.





GLUER - SEALER

Incorporating such features as Flap Pre-heaters — controlled jet glue applicators — visible glue supply and many others. Write for Bulletin SC-1498.

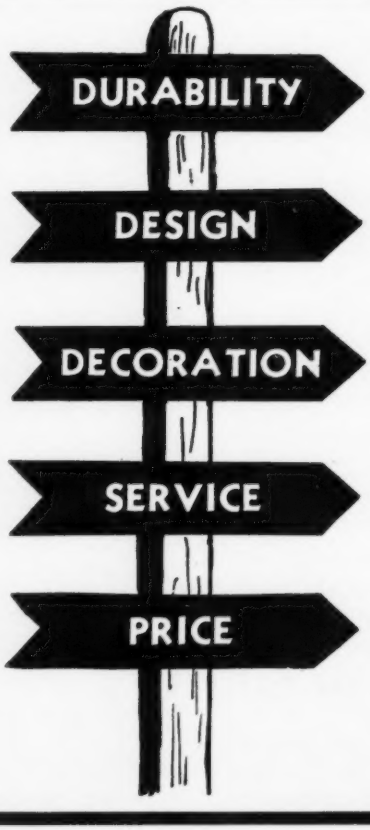
INVESTIGATE OTHER NEW-WAY PACKAGING MACHINERY

The Best IN LABELING AND PACKAGING Equipment

Chisholm-Ryder

COMPANY OF PENNSYLVANIA

HANOVER, PENNSYLVANIA



Eastern's superior workmanship guarantees strong, durable containers that will take your product safely to market.

Eastern's experts can be of major assistance in designing packages that win sales success.

Eastern is noted for top-quality lithography on every shipment.

No costly interruptions with Eastern's service — shipments arrive when and where you specify.

Eastern's advantages available at competitive prices because of our modern plant and long experience.

All Signs Point to EASTERN *for Distinctive* PACKAGING

Start on the road to a distinctive package for your waxes, cleaners, polishes and other specialties by calling in Eastern. Plain or lithographed — a package by Eastern guarantees satisfaction for both you and the consumer.

Further details available without obligation

W N S

EASTERN CAN CO., INC.

31 Keap St., Brooklyn 11, N. Y.

ULster 5-0100

NEW Trade Marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12(a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of $25 must accompany notice of opposition.

Muscaron—This for agents for controlling moths, flies, gnats and cockroaches. Filed June 27, 1956 by Farbenfarbriken Bayer A.G., Leverkusen, Germany. Claims use since July 12, 1954.

Re-Nu — This for stain and water repellent compound for household and industrial use. Filed Aug. 14, 1956 by Re-Nu Manufacturing Co., Columbia, S. C. Claims use since Jan. 1, 1956.

Sure-Safe—This for insecticides. Filed Aug. 1, 1955 by Sure-Safe Co., St. Louis. Claims use since July 5, 1955.

Life Paint—This for combination cleaner and polish for automobiles. Filed July 19, 1956 by Easy Glitter Wax Co., West Palm Beach, Fla. Claims use since May 28, 1956.

D and D—This for aerosol container for industrial and household products. Filed June 20, 1955 by Demert & Dougherty, Inc., Chicago. Claims use since 1948.

Naco—This for insecticide dust. Filed Mar. 9, 1956 by W. R. Grace & Co., New York. Claims use since 1950.

Sulframin—This for surface active agents for general industrial use. Filed July 9, 1956 by Ultra Chemical Works, Inc., Paterson, N. J. Claims use since January, 1939.

Mintogrene—This for industrial deodorant and disinfectant. Filed Aug. 8, 1956 by Tech Soap Manufacturing Co., Chicago. Claims use since July, 1955.

Rodip—This for metal polish. Filed Sept. 6, 1956 by R. O. Hull & Co., Rocky River, O. Claims use since Apr. 30, 1956.

Mid-Jit—This for manually operated sprayer for insecticides, pesticides, weed killers and fungicides. Filed Nov. 26, 1956 by Hudson Manufacturing Co., Chicago. Claims use since June 1, 1956.

Alchemize—This for combination cleaner and polish for non-ferrous metals. Filed Apr. 5, 1955 by Alchemize Corp., Chicago. Claims use since Aug. 2, 1948.

Blonde Magic—This for shampoo. Filed Jan. 31, 1956 by Bogay, Inc., Boston. Claims use since June 1, 1949.

Big Squirt—This for windshield cleaner. Filed Apr. 12, 1956 by Demert & Dougherty, Inc., Chicago. Claims use since about July 1, 1951.

Cleanarama—This for soap and detergent dishwashing compound. Filed June 21, 1956 by Charles Bain doing business as Industrial Chemical Products Co., Philadelphia. Claims use since January, 1954.

Deltore—This for shampoo. Filed July 23, 1956 by Deltex Industries, Inc., New York. Claims use since Apr. 4, 1955.

Limelite—This for powdered cleaner for use in bottle washing machines. Filed Sept. 27, 1956 by Oakite Products, Inc., New York. Claims use since July, 1954.

Wool-Brite—This for soap used in cold-water washing of woolen goods. Filed Nov. 21, 1956 by J. C. Garet, Inc., Hollywood, Calif. Claims use since Aug. 11, 1955.

Slip-Stream—This for polish for use on automobiles and like metal surfaces. Filed Mar. 1, 1955 by Easy Glitter Wax Co., West Palm Beach, Fla. Claims use since Mar. 14, 1954.

Ascot—This for cleaner and polish for use on metal, glass, porcelain and enamel surfaces. Filed Mar. 19, 1956 by Pollak Luminescent Corp., Chicago. Claims use since Feb. 23, 1956.

Vista—This for car wax and cleaner. Filed Apr. 17, 1956 by Simoniz Co., Chicago. Claims use since Nov. 30, 1955.

66—This for anti-freeze and hydraulic brake fluid. Filed June 17, 1955 by Phillips Petroleum Co., Bartlesville, Okla. Claims use since June 3, 1931.

Johnson's—This for laundry wax-starch. Filed Jan. 30, 1956 by S. C. Johnson & Son, Inc., Racine, Wis. Claims use since Aug. 31, 1948.

Re-Odit—This for liquid household and hospital deodorant. Filed Mar. 12, 1956 by Clyserol Laboratories, Inc., Oklahoma City, Okla. Claims use since Feb. 1, 1956.

Legumex—This for insecticides and weed killers. Filed June 28, 1956 by Fisons Pest Control, Ltd., Bourn, England. British patent obtained Nov. 9, 1955.

Bonded—This for anti-freeze. Filed Apr. 19, 1956 by Gaseteria, Inc., Indianapolis, Ind. Claims use since Sept. 21, 1955.

Durham—This for insecticides, fungicides and herbicides. Filed Aug. 6, 1956 by Durham Chemical Co., Los Angeles. Claims use since Jan. 23, 1946.

Nutrilite—This for shampoo which also bleaches the hair. Filed Sept. 6, 1956 by Middlebrooke Lancaster, Inc., Brooklyn, N. Y. Claims use since November, 1952.

Dan-Dum—This for shampoo. Filed Sept. 10, 1956 by California Chemical Co., Los Angeles. Claims use since Aug. 1, 1956.

Firm—This for sudsing cleaner, cleanser and detergent. Filed Sept. 18, 1956 by Colgate-Palmolive Co., New York. Claims use since June 13, 1956.

Sooth-Off—This for cleaner for removal of grease, paint and tar from the skin. Filed Sept. 18, 1956 by George P. Comeau, Huntington, N. Y. Claims use since Sept. 1, 1956.

Dart—This for furniture and floor polish. Filed Feb. 18, 1954 by S. H. Kress and Co., New York. Claims use since Mar. 2, 1940; and Feb. 1, 1933, in another form.

Iocide—This for antiseptic germicide. Filed Mar. 23, 1956 by Clay-Adams, Inc., New York. Claims use since Mar. 1, 1956.

Angel Touch—This for household deodorant spray. Filed July 10, 1956 by William Harlton, Philadelphia. Claims use since Jan. 24, 1956.

Thridol—Vegadex—These for herbicides. Filed July 19, 1956 by Monsanto Chemical Co., St. Louis. Claims use since July 12, 1956.

Applause—This for shaving cream. Filed June 19, 1956 by Colgate-Palmolive Co., New York. Claims use since Nov. 16, 1955.

Guardsman—This for cleaning polish for furniture and automobiles. Filed Mar. 15, 1955 by Grand Rapids Varnish Corp., Grand Rapids, Mich. Claims use since Sept. 1, 1945.

Guthion—This for insecticides. Filed Apr. 19, 1956 by Chemargo Corp., New York. Claims use since Mar. 28, 1956.

Nox*Moss—This for herbicides. Filed July 9, 1956 by Agro Products Co., Payallup, Wash. Claims use since June 9, 1955.

Anderol—This for liquid detergent. Filed May 7, 1956 by Kent Chemical Co., Reading, Pa. Claims use since Sept. 1, 1946.

Revlon—This for shampoo and toilet soap. Filed June 8, 1956 by Revlon Inc., New York. Claims use since May 17, 1950.

Shield—This for soaps. Filed July 16, 1956 by Lever Brothers Co., New York. Claims use since June 14, 1956.

"Un-Do"—This for solvent for dry cleaning. Filed Aug. 1, 1956 by Miller Processing Co., Greenville, O. Claims use since July 18, 1956.

Moonlight—This for household detergent. Filed Aug. 1, 1956 by Sunlight Chemical Corp., Phillipsdale, R. I. Claims use since June, 1956.

Hand Life—This for hand cleaner. Filed Sept. 11, 1956 by Easy Glitter Wax Co., West Palm Beach, Fla. Claims use since Sept. 7, 1951.

Flyte—This for toilet soap bar. Filed Jan. 30, 1957 by Lever Brothers Co., New York. Claims use since Dec. 6, 1956.

Nude—This for soap. Filed Sept. 18, 1956 by Cigogne, Inc., New York. Claims use since Aug. 28, 1956.

★

Glidden Price Reductions

Reductions in the price of its methyl chavicol ranging from $1.50 to $2.00 per pound, were announced recently by the Southern Chemical Division of The Glidden Co., Cleveland. Methyl chavicol or estragole is used in compounding odors and flavors. According to the announcement, the price cut was made possible by improved methods of manufacture. Further information may be obtained from The Glidden Co., Southern Chemical Division, Box 389, Jacksonville 1, Fla.

Around the World

RISDON VALVES

Dispense a World of Aerosol Spray Products

FOR

Pressurized Products Packaged in Glass, Metal or Plastic Containers.

DISPENSING

Conventional Aerosols, 3-Phase Products, Alcohol Base Products, Water-Base Products, Foam Products, Powder Sprays, Metered Sprays, Ultra-Low Pressure Applications, Products Containing Propellent Emulsions or Dispersions, etc.

Both geographically and in range of application, the Risdon line of aerosol valves covers a world of spray products.

They are produced by Risdon in the U. S. and by licensees* in England, Germany, Australia, France, Italy and Japan. Here and abroad, they enhance both the performance and appearance of metal, glass and plastic containers, dispensing a vast variety of product formulations.

Write, today, for free booklets on any or all of the Risdon valves shown here.

THE RISDON MANUFACTURING COMPANY
Valve Division, Naugatuck, Conn.

* GLENHAM PRODUCTS LTD., QUADREX HOUSE, PARK LANE, LONDON W1
PLASVERRE, 13-15 RUE TAITBOUT, PARIS 9
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AEROSOL INDUSTRIES CORP., FUJITA BLDG., OSAKA
SOLFRENE, VIA G. MATTEOTTI 12, CORSICO, MILAN
SPRÜHTECHNIK, RHEINFELDEN/BADEN, GERMANY

RISDON

** Patents Applied For*
*** Patented*

PRESSURE PACKAGING

Dr. Mina Joins Lodes Aerosol Consultants

DR. FRANCIS A. MINA has joined Lodes Aerosol Consultants, Inc., New York, as technical director, it was announced May 1 by Frederick G. Lodes, president. Dr. Mina formerly was vice-president and general manager of E. A. Bromund Co., a subsidiary of Chemway Corp., Mountain View, N. J.

A graduate of Fordham University, where he received his Ph.D. in physiology, Dr. Mina was an instructor in bacteriology and other biological sciences before entering the industrial field in 1946. Since that time, he has directed bacteriological and biological testing of various products; has supervised research and development on new products and hospital clinical investigations on new drug products.

One of his major achievements in the aerosol field was research work on development and marketing of the first glass aerosol. The initial phase of this research program played a major role in the marketing of the first three-phase aerosol system and subsequently the ultra-low pressure system for dispensing alcohol based formulations.

Francis A. Mina

Dr. Mina, who is active on many aerosol committees of the Chemical Specialties Manufacturers Association, joined Zonite Products Corp., New Brunswick, in 1946 and served as chief chemist and technical director. In the latter capacity with Zonite, later known as Chemway, Dr. Mina was in charge of coordinating technical consultations between his firm and foreign manufacturers and agents.

Dr. Mina holds several U.S. and foreign patents in the aerosol field. He has published a number of articles dealing with aerosols on specific formulations, filling methods and containers, including one entitled, "Glass Aerosols," which appeared in the December, 1954 issue of *Soap and Chemical Specialties*.

—★—

Bridgeport Earnings Lower

Sales and earnings of Bridgeport Brass Co., Bridgeport, Conn., decreased in the first quarter of 1957, it was announced recently by Herman W. Steinkraus, president. Net sales totaled $38,409,696, a decrease of 24 per cent from the $50,781,279 in the corresponding period of 1956. Net income for the first three months of 1956 amounted to $1,423,000, equal to share earnings of 87 cents, a 17 per cent drop from the $1,735,898 and $1.08, in a similar period a year ago.

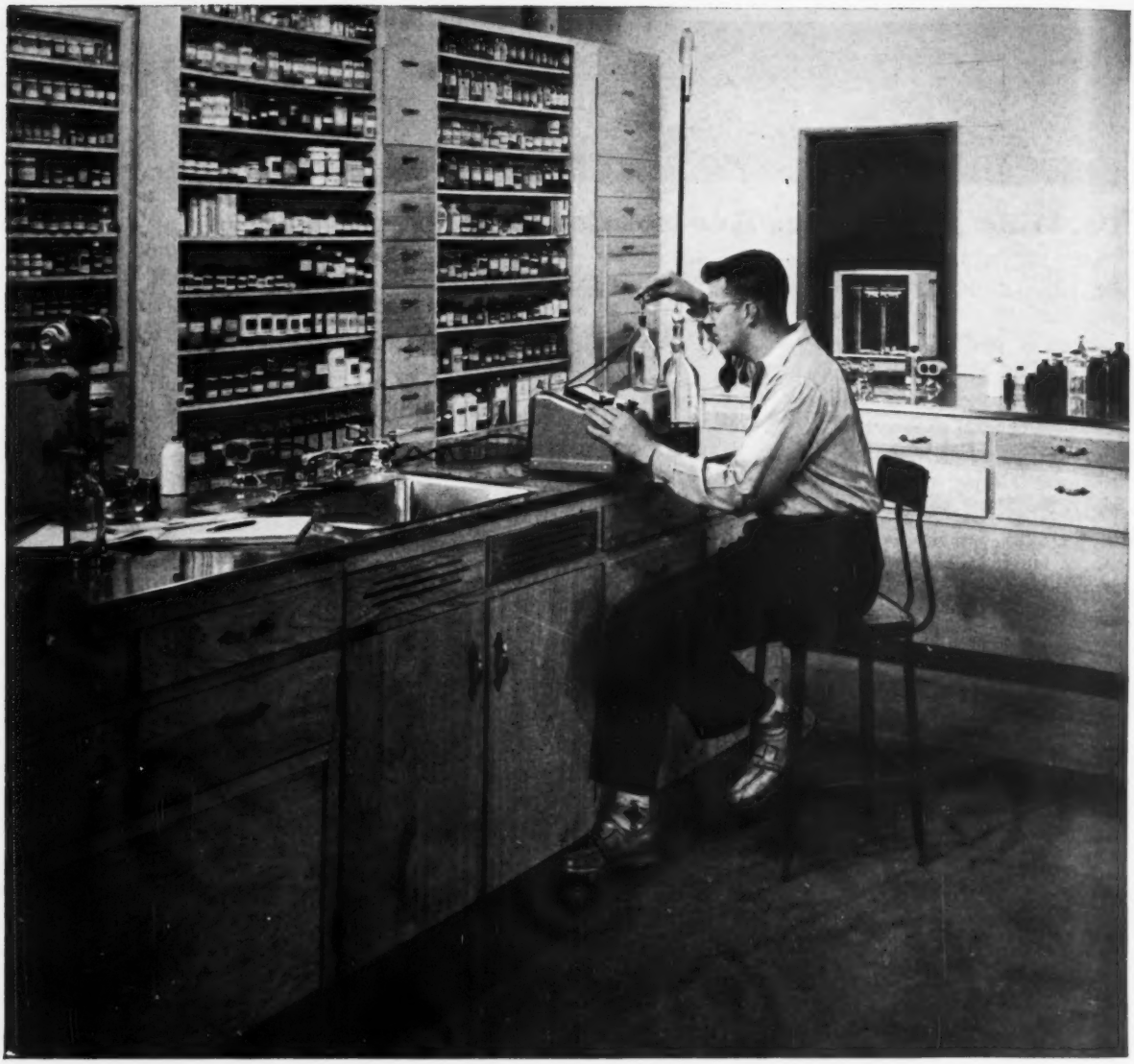
—★—

New VCA Aerosol Dispenser

A new aerosol dispensing unit which combines valve and cap has been developed by Valve Corp. of America, Bridgeport, Conn., it was announced recently by Philip

Jewel Chemical Corp., Brooklyn, N. Y., last month announced a new aerosol car polish for use on any color automobile. Said to be easy to apply, the product contains wax and is claimed to provide protection against heat, cold, rain and snow. 12-ounce aerosol can retails for $2.49 and contains ample polish for two applications, according to the maker.

New sealer designed to provide electrical components with protection from moisture, oils and chemicals, was announced recently by the Irvington Division of Minnesota Mining and Manufacturing Co., Irvington, N. J. Tradenamed sealer "No. 30," the product comes in 12-ounce aerosol container. Filling is by Sprayon Products, Inc., Cleveland.



Does *Your Product* Fit Into This Picture?

Aerosol and pressurized packaging is boosting sales for hundreds of products . . . from insecticides to hair lacquers . . . from perfumes to mothproofers . . . from rug shampoos to hand lotions . . . from deodorants to shaving lathers.

Let us test your product to determine its adaptability to packaging the modern way. We'll do the research in our modern laboratory at no expense or obligation to you. Then we'll sit down with you for a frank discussion of exactly what facilities we have to offer in production, quality control, storage and shipping. Write, wire or 'phone . . . you'll find it worth your while.

PETERSON
Filling and Packaging Co.
HEGELER LANE • DANVILLE, ILLINOIS

H. Sagarin, president. Called "Mist-Top," the new unit is available with either conventional or metered valves. Caps come in plastic, brass or aluminum, are custom shaped and are available in all colors. "Mist-Top" is designed to fit all standard 10cc. to four ounce aerosol containers and can be obtained with either wet or dry spray. Both types may be fitted with a mechanical break-up device to obtain bursts of extremely fine particles.

—★—

Three New Aerosols

A new pressure packaged metal polish combines Vienna clay and ammonia in an oil emulsion. Dispensed as a foam it is said to remove normal accumulations of tarnish with a minimum of rubbing, rust and heavy tarnish with very little mechanical action. "Polyglo" is said to be free from corrosive and harshly abrasive ingredients and from skin-irritants. It is designed for use on kitchen utensils, cutlery, automobile chrome, tools and other metal surfaces.

An aerosol dispensed foam of cedar oils and carnauba wax is marketed under the trade name "Polywax." The product is intended for use on furniture and woodwork, but is effective also on paint, varnish, leather and plastic surfaces. Buffing is optional.

"Preservatol" rust and tarnish preventive is a pressure dispensed protective film designed for coating cleaned metal surfaces. The anti-rust and tarnish deposit is said to be non-greasy.

All three products are formulated with "Freon" propellant by Kensol Corp., Allentown, Pa., sell in retail outlets for $1.89 a 12-ounce container or for $2.00 direct from the producer.

—★—

New Gulf Aerosol Valve

A new aerosol valve, designed to permit the dispensing of an aerosol product from an inverted position and thus produce either a dry or wet spray, was introduced recently by Gulf Research & Development Co., Pittsburgh. According to the announcement, the type of spray is determined by the position of the package when dispensing. Valves may also be produced to give only a dry or only a wet spray in both positions.

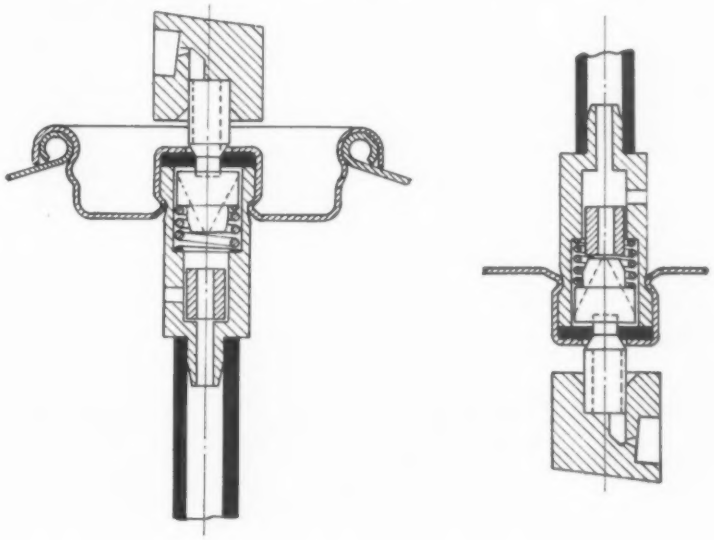
Feature of the new valve, which was developed at Gulf's research center at Harmarville, Pa., is a gravity slide, which is utilized to open or close an orifice in the valve body, depending upon the position of the dispenser. When upright, the orifice is closed, preventing loss of gas. When inverted, the orifice is open and liquid contents are discharged by passing directly into the valve body. The valve is claimed to be inexpensive and suitable for incorporation into existing valve designs.

Conventional dispensers with eductor tubes require the package

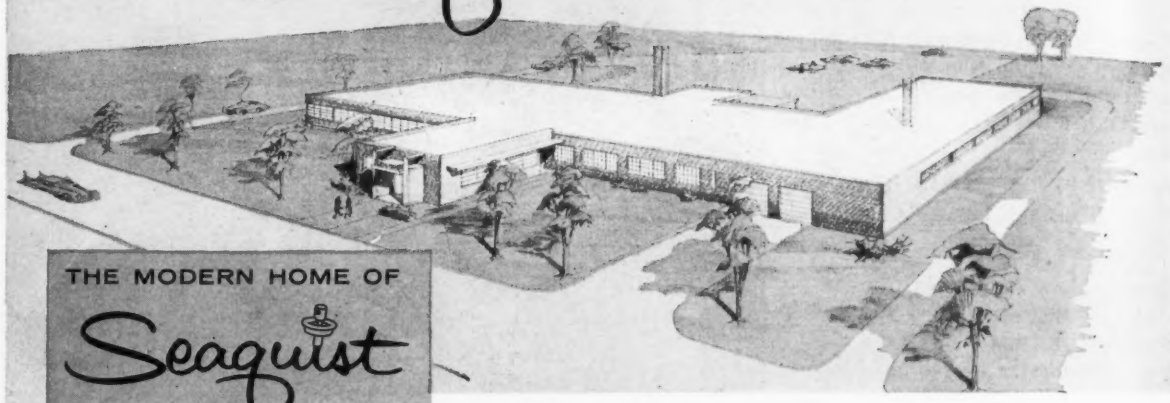
(*Turn to Page* 255)

James Bampton, left, president, Stalfort of Pennsylvania, Inc., welcomes Frank Lucard, manager of Pennsalt's "Isotron" Chemicals Department to Stalfort's Norristown plant to witness handling of first tank truckload delivery of aerosol propellants in that area. Stalfort manufactures "Krylon" brand of aerosol spray paints. "Isotron" aerosol propellants are Pennsalt's newest line of specialty chemicals. They are produced at Calvert City, Ky. and distributed in the Middle Atlantic area through a new storage depot at Cornwells Heights.

New Gulf aerosol valve, which operates in upright or inverted position.



SEE Seaquist FOR BETTER AEROSOL VALVES!



THE MODERN HOME OF
Seaquist
AEROSOL VALVES

SHAVE CREAMS

HAIR LACQUERS

INSECTICIDES

ON TOP OF THE AEROSOL MARKET
ON TOP OF MANY FINE PRODUCTS

Note these cost-reducing, profit-producing features of the Seaquist 750-NN Valve: 1) Excellent service and delivery. All orders shipped as required by our customer. 2) New nylon design, chemically resistant to corrosion, still just as effective with non-corrosive products. 3) Exclusive sealing and retaining ring eliminates lost buttons, assures cleaner handling and longer life of valve head. 4.) The Seaquist Valve has three controllable orifices, provides desired density of spray and uniformity of the spray pattern, for wider range of products! The Seaquist Valve is adaptable and versatile...reducing your inventory, cutting costs! Write us . . . *today!* Your inquiry will receive prompt, personal attention!

A PIONEER IN SMC AEROSOL VALVES

Seaquist MANUFACTURING CORPORATION
CARY, ILLINOIS

CSMA Aerosol Promotion Program Under Way

A $25,000 aerosol publicity program designed to increase the sale and acceptance of aerosol products was begun April 15 under the auspices of the Chemical Specialties Manufacturers Association. The campaign will be conducted by the G. M. Basford Co., 60 East 42nd St,, New York 17, and will feature radio, television, motion pictures and certain printed media as the basis of its programming activities.

A steering commitee composed of seven members of the CSMA aerosol publicity committee has been selected to serve as an advisory body to Basford. It will determine policy for the program and issue periodic reports on the progress and accomplishments of the campaign.

Designed chiefly to stimulate the sale of aerosol products at the consumer level, the program is financed by contributions from fillers, marketers and suppliers in the aerosol field. At present 51 firms have subscribed.

Members of the steering committee include Frederick G. Lodes, chairman, Lodes Aerosol Consultants, Inc., New York; James W. Bampton, Krylon, Inc., Philadelphia; W. Earl Graham, Crown Cork & Seal, Inc., Baltimore; A. R. Marks, Wheaton Plastics Co., Mays Landing, N. J.; A. S. Pero, Fluid Chemical Co., Newark, N. J.; C. S. Stephens, American Can Co., New York; and J. J. Tomlinson, General Chemical Division of Allied Chemical & Dye Corp., New York.

The aerosol publicity committee is composed of Mr. Lodes, chairman; Mr. Bampton; Mr. Graham; Mr. Pero; Mr. Stephens; and Mr. Tomlinson; plus Douglas Atlas, G. Barr and Co., Chicago; W. E. Baulieu, Bridgeport Brass Co., Bridgeport Conn.; Walter C. Beard, Jr., Risdon Manufacturing Co., Naugatuck, Conn., W. Austin Bishop, Pennsylvania Salt Manufacturing Co., Philadelphia; E. P. Hay, Antara Division of General Aniline & Film Corp., New York; M. J. Heffernan, Kinetic Chemicals Division, E. I. du Pont de Nemours & Co., Wilmington, Del.; Edward R. Lasner, Connecticut Chemical Research Corp., Bridgeport; Ira P. MacNair, MacNair-Dorland Co., New York; H. R. Shepherd, Aerosol Techniques, Inc., Bridgeport; J. W. Soffer, Clayton Corp., St. Louis; Martin Tausz, Helene Curtis Industries, Inc., Chicago; J. R. Wallace, Continental Can Co., New York; and S. Was, Valve Corp. of America, Bridgeport.

New all-purpose insect repellent called "Off!," marketed in five-ounce aerosol container, was introduced recently by S. C. Johnson & Son, Inc., Racine, Wis. "Off!" is based on new diethyltoluamide repellent of U. S. Dept. of Agriculture. Product, which according to the manufacturer can be applied safely to skin or most types of clothing. Companion 1½ ounce bottle retails for 75 cents, while aerosol sells for $1.19.

New aerosol spray designed to dry flies that are utilized as bait in trout fishing, was developed recently by Hank Roberts, Inc., Boulder, Colo. Product, tradenamed "Drifly," is also claimed to be easy to apply and eliminate oily ring on water. Comes in plastic-coated glass aerosol bottle by Wheaton Plastics Co., Mays Landing, N. J. Valve is by Precision Valve Corp., Yonkers, N. Y.

A new phosphorescent safety spray paint designed for use on all surfaces, was announced recently by Radio Active Products Corp., Philadelphia. Tradenamed "Glowing" spray, product utilizes zinc sulfide as its source of luminescence. Comes in 12-ounce aerosol container, which contains enough chemical to coat 20 square feet of white surface, and retails for $3.89. Dispensing pressure is provided by du Pont "Freon" propellent.

ARE YOUR PRODUCTS SELLING IN PROFITABLE VOLUME TO —

- ☐ Hospitals
- ☐ Hotels
- ☐ Restaurants
- ☐ Office Buildings
- ☐ Schools
- ☐ Manufacturers
- ☐ Greenhouses
- ☐ Garages
- ☐ Clothes Cleaners
- ☐ Upholsterers
- ☐ Farmers
- ☐ Food Processers
- ☐ Nurseries
- ☐ Armed Forces
- ☐ and many other Volume Users

Standard Sizes
55, 75 and 132 Cu. In.
Other sizes on request

240 lb. Working Pressure
I.C.C. Approved

HOW TO INCREASE SALES WITH KING SIZE T-M-C AEROSOL CONTAINERS

If you manufacture fluid, semi-fluid or powdered materials you can now sell the volume users with TMC KING SIZE Aerosol Containers. They give you the proven sales appeal of aerosol convenience in KING SIZE dispensers. It pays to sell quarts instead of ounces. When you make your products easier to use—people use more of it! It deserves looking into... write or phone for your personal copy of "The Latest Thinking on Marketing under Pressure."

TUBE MANIFOLD CORPORATION
429 Bryant St. LUdlow 7900 N. Tonawanda, N.Y.

Experimental screw-on tops for glass Aerosol Containers

Used to make refillable glass aerosol containers
Will fit coated and uncoated bottles.
If you have special bottle, send sample for sure fit
Set includes 6 sets of valves, 2 oz. plastic coated bottles and valves.

PRICE: $23.50

DRILL PRESS CAPPING MACHINE
for rolling and fastening aluminum or steel valves to top of glass bottles. Production rate approximately 2 per minute. Foot switch included.

PRICE: $198.00

• • •

Other items for experimental aerosol filling include: pressure fillers; constant temperature water baths; snap-on cap for aerosol containers; pressure testers; liquid transfer apparatus.

Builders Sheet Metal Works, Inc.

108 Wooster St. New York 12, N. Y.
CAnal 6-5390-8 William Scheck

THE COMPLETE *Aerosol* METAL CAP LINE

Samples and Quotations on Request

West Penn Mfg. & Supply Corp.
Brackenridge, Pa.

Arthur Cross

James Coffield

Peterson Filling Names Two

Peterson Filling & Packaging Corp., Danville, Ill., recently announced the appointments of Art Cross and James Coffield as sales representatives. Both men will headquarter at the firm's Chicago office, 7720 North Sheridan Rd. Mr. Cross formerly was vice-president in charge of sales and advertising for the Cameo Corp., Chicago. Prior to joining Peterson, Mr. Coffield was division sales manager for Mullery Paper Packages, Inc., St. Paul, Minn. Earlier he served as sales manager for Sefton Fibre Can Co.

Give Your Product That Luxurious Look

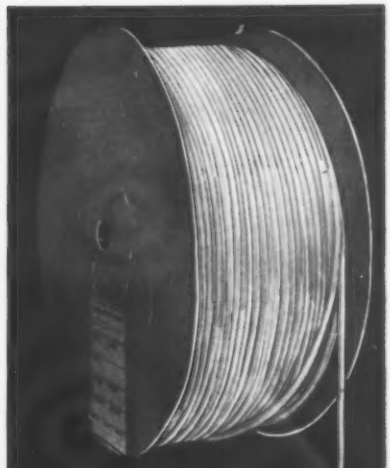
A secondary seal to insure product freshness and appearance. Oyster white, opaque, matte finish, vinyl—impervious to alcohol, moisture, oil or hot-packed products. Keep jar lids clean and dry.

Your logotype embossed or hot stamped for beauty—printed directions or sales message on flat discs often eliminates a label.

Jar Discs cost surprisingly little—come in flat or formed, embossed or printed styles. Write for samples and quotations on your letterhead. Indicate sizes and quantity if possible with sample jar for exact fit.

THE **WALTER FRANK** ORGANIZATION

Design and sale of packaging components. Box 111C, Elmhurst, Ill.



Highest Quality
POLYETHYLENE TUBING for AEROSOLS

. . . Now available in neatly traversed spools . . . no kinks no snarls!

Available on spools in lengths up to 3000 feet. Prevent costly delays—save time and money.

HYDRALENE NO. 35 polyethylene tubing will not split or crack even with tight friction fits.

Features:

- Only finest quality virgin material.
- Close tolerances.
- Withstands severest tests for non-splitting or cracking.
- Also available in coils or cut pieces.

This tubing is the result of years of careful development work in the aerosol field.

Write today for free samples and Prices.

Hydrawlik

131 East First Ave
Roselle, New Jersey
Phone CHestnut 5-0368

New General Electric leak detector checks each can quickly, automatically, safely

HELPS ASSURE LONG SHELF LIFE, IMPROVES QUALITY CONTROL

Continuous production line testing of pressurized cans is now possible with General Electric's new "fixed-head" leak detector. Designed for use by manufacturers of insecticides, hair lacquers, plastic sprays, shave lathers, shampoos, etc., the new unit accurately leak-checks every can on the line. This 100% leak test helps protect product quality. Complaints and returns caused by deterioration on dealer's shelves can be sizeably reduced.

Automatic rejection of faulty cans can be initiated by the new system. Manual testing of cans is eliminated and this new method is more sensitive and much faster than conventional "hot-water" methods.

Tolerance limits for quality control can be set and maintained through use of General Electric's new "leak-standard." Experience with your product will show the size leak which is permissible to maintain product quality for the desired period of time. The "leak-standard" makes possible quantitative measurement of the leak and proper calibration of the detector to predetermined limits for precise quality control.

For further information about how to apply this new leak detection system, call your nearest General Electric Apparatus Sales Office or write to Section 585-56A, General Electric Company, Schenectady 5, N. Y.

ACCURATE LEAK DETECTION MEANS PROFITS

GENERAL ELECTRIC

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Production...

EQUIPMENT • MATERIALS • PROCESSING

Production Clinic

Soap Plant Observer

Products and Processes

New Patents

Book Reviews

Bulletins and Equipment

High-speed "Drene" shampoo filling line in Procter & Gamble plant. Modern production techniques are featured in P&G motion picture, "A Better Way," from which still photograph of line was taken. Recently introduced color, sound film describes segments of P&G's operation.

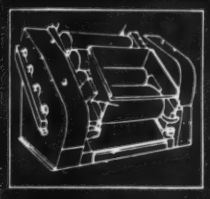
What Does A Century's Experience In Making Soap Machinery Mean To You

For more than a century, Houchin has designed and manufactured soap making machinery. It has seen commercial soap making grow from a low production luxury business, when most soap was made in the home, to one amounting annually to many millions of dollars.

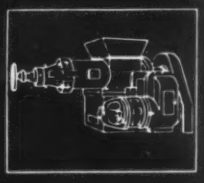
Houchin has kept pace with that development. As need for newer, faster, better machines grew for mixing, milling, plodding, cutting, pressing, wrapping and other operations, Houchin met those needs.

We believe that more soaperies in the United States use Houchin machinery than any other make, in addition to which we have, fully or partially, equipped many soaperies in other countries.

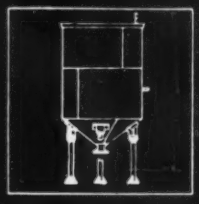
In the future, as well as in the past, you may rely upon Houchin to help you make good soap better.



MILLS



PLODDERS



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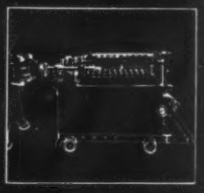
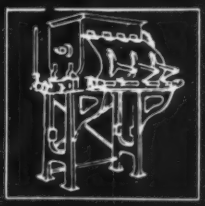
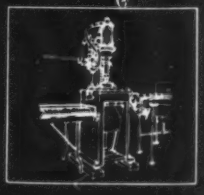


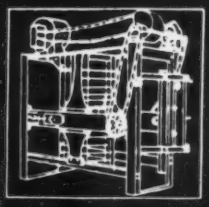
TOILET SOAP CUTTERS



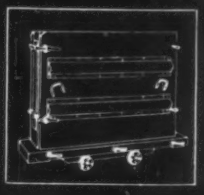
AMALGAMATORS



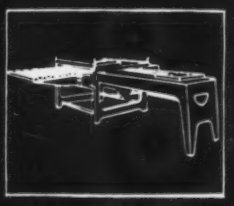
PRESSES



SLABBERS



SOAP FRAMES



LAUNDRY SOAP CUTTERS

HOUCHIN MACHINERY CO., INC.

HAWTHORNE, NEW JERSEY, U. S. A.

Manufacturers of Soap Making Machinery for over a Century

SOAP ADDITIVES

TOILET soap can compete in the increasingly discriminating market of today only with the help of special additives. Popular and relatively low priced soaps incorporating dermatologically active ingredients are the rule both here and abroad. One of the oldest and best known soap additives is lanolin, now commonly used as an important selling point in toilet soap advertising. Many soap improvers are available today, including water softening agents which make for economy and increased foaming power; materials which reduce or eliminate alkalinity; germicides and deodorants; and compounds which leave a beneficial film on the skin. The extra cost of such additives can be compensated for by incorporating fillers such as talc, kaolin, or bentonite which do not impair the quality of the soap. Generally it is preferable to use a combination of additives rather than an individual material.

Carboxymethyl Cellulose

CARBOXYMETHYL cellulose may be considered the foundation and emulsifying base of any compounded soap additive. Its presence in a low priced general purpose soap is at least as desirable as it is in a luxury soap, because it may balance some shortcomings in formulation and processing.

As little as one per cent of a five per cent carboxymethyl cellulose solution, incorporated in the soap, facilitates milling and permits smoother extrusion, causes formation of a surface film which excludes air from the finished soap and imparts greater brilliance and smoothness to the bar. Lathering power and quality are improved. Many users reported an impression of mildness produced by liquid soap having a pH of 11 and containing free alakali and three per cent sodium triphosphate, provided the soap contained CMC.

The soap may become sticky if more than two per cent CMC solution is added. However, for best results the highest workable percentage should be added. Since this limit depends directly on the hardness of the fat charge, the presence of CMC in the charge may enable the soap maker to use harder fats if this is desirable. The use of CMC solution is a good way to introduce moisture into a dry soap, without fear of complications.

High Mol Organic Acid

A POLYMERIZED high molecular organic acid (acid number 410-430) produces results similar to those achieved with CMC. The material is a fine white powder, insoluble in water, but rendered water soluble by pasting with alkali, even prior to complete neutralization. In soap the product should be used in neutral or alkaline solution. It goes into very clear and heavily viscous solution with triethanolamine, also forms transparent and viscous solutions with alkaline earth hydroxides, oxides, and carbonates, is soluble in methyl and ethyl alcohols and in glycerine. In glycols a slightly cloudy solution is formed. Highly viscous solutions of this acid are most desirable for soap making. The effect is very similar to that of the cellulose derivatives: a fine stable and mild lather; the soap soft and easy to mill. The material corrects the opaque and cheese like appearance of soaps whitened with zinc oxide or titanium dioxide. It is particularly useful in partially or entirely synthetic products because it counteracts any skin irritating effects of the detergent. In addition to toilet soaps, the organic acid may be usefully added to liquid soaps, creme shampoos, tooth pastes, and a number of cosmetic preparations. If the material is stored in solution, a preservative must be added.

Lanolin

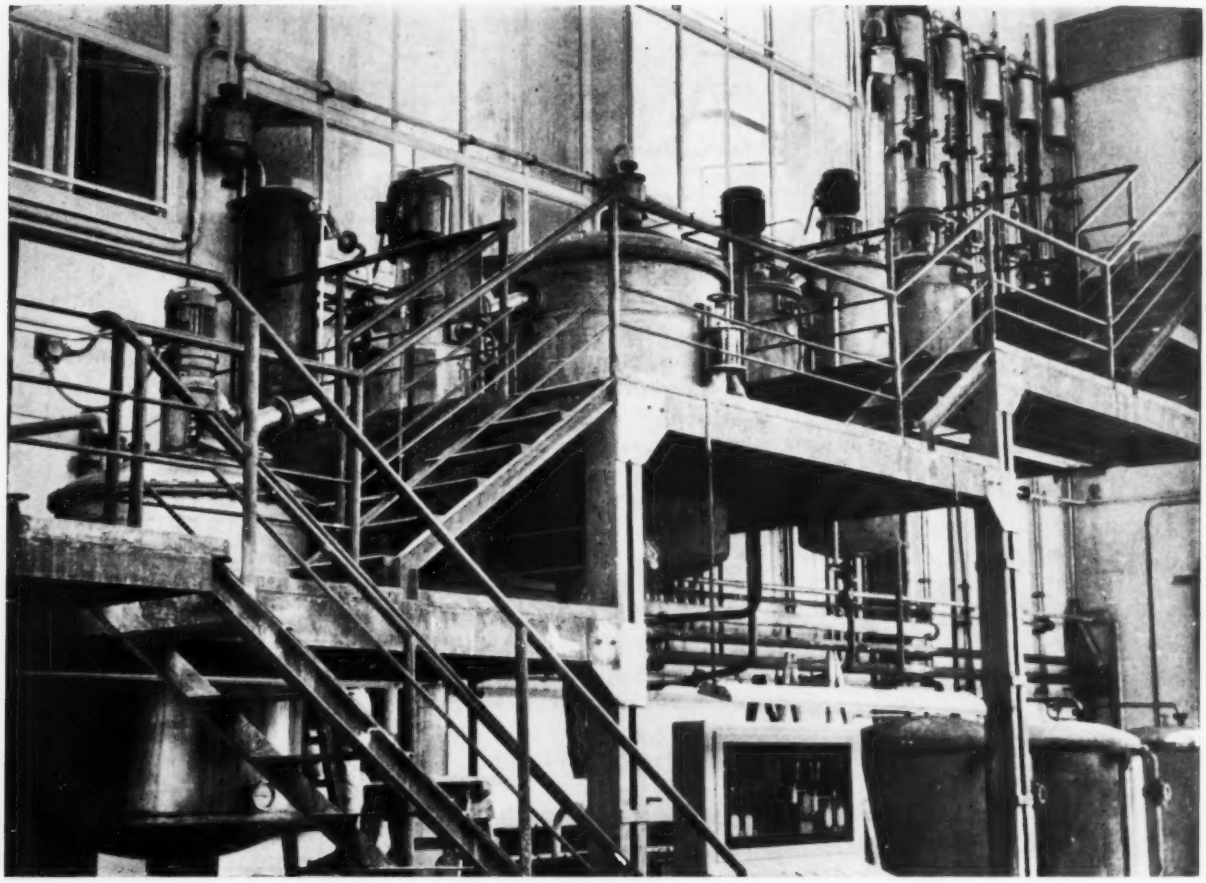
LANOLIN, used in combination with either CMC or the acid, will endow any soap with cosmetic properties. Pharmaceutical grade anhydrous lanolin should be used at the rate of two to five per cent. More lanolin may be added if the fat charge is hard and extra coconut oil is present. Up to one per cent lanolin may act as an improver of milling properties.

Sperm Oil Derivative

A SPERM oil derivative, which contains 35 per cent fatty alcohols, 10 per cent fatty alcohol sulfonate, and 55 per cent fatty acids is an effective emulsifier. The fatty acids (stearic, palmitic and oleic) at first combined with the alcohols, mostly cholesterol and cetyl alcohol, become available after saponification. However, the fact that the sperm oil derivative is not readily saponified, must be taken into account in the processing method. To forestall difficulties the additive should be saponified separately with parts of the coconut oil charge. The presence of the derivative makes for homogeneous distribution of fatty alcohols in

MECCANICHE MODERNE

Corso Sempione, 51 — BUSTO ARSIZIO (Italy)



500 Kgs. per hour "SULFAN" plant in operation

"SULFAN" CONTINUOUS SULFONATION PLANT — "Ballestra" Patent Basic operating principles

Pre-dilution of reacting matters into the reaction product and consequently:

—No more local overheating !

—No more di-sulfonated matter !

—No more product discoloration !

—No more temperature troubles as with batch plants !

—No more ice dilution of sulfonated matter: water is perfectly O.K. !

—No more expensive refrigerating units !

Manufacturing characteristics

—Cooling by means of tap water (Max. temperature 20° C.)

—Constant pH values in each step: each vessel is manufactured in the more resistant material to suit the pH value and consequently: no more corrosion.

—Perfect and simple proportioning of the reacting matters with no moving parts for doing it.

—Perfectly constant reaction times in each step and consequently perfectly homogeneous products.

—Totally automatic operation, controlled from one main board.

—Possibility of getting slurries with high active matter, very low mineral salts content and practically no unsulfonated matter.

—A very wide range of sulfonable matters can be employed as raw material.

Economic advantages

Longer lasting plant: lower mortgage percentages.

—A sulfan plant requires about 1/5 of the space required by a batch plant of the same capacity: substantial money savings on space and building costs.

—Very low operating costs: one man is sufficient to inspect the running plant at regular intervals.

—Lower current consumption because no refrigerating unit is needed and less power is required due to the smaller dimensions of the vessels.

—A high degree of sulfonation prevents alkane waste in drying the slurry.

U. S. Sales Representatives:
American Associates, 507 Fifth Ave., N. Y. 17, N. Y.

the charge during saponification.

The soap is made more fluid using this sperm oil derivative and the settling out process more rapid and more complete. Base soap and soap flakes gain in suppleness and mildness. A fully saponifiable coconut oil soap, made with 15 per cent of such a superfatting agent, was very supple and imparted to the skin a pleasant, creamy feeling. The cosmetic fatty alcohols are absorbed from the soap on to the skin, according to the author.

Other Fatty Alcohols

THE following alcohols are good superfatting and cosmetic soap additives: Mixtures of unsaturated and saturated fatty alcohols, mostly C_{16} and C_{18}; boiling point 305 to 340°C; solidification point 31 to 34°C; acid number below 1; saponification number below 2; iodine number 30 to 35.

Saturated, monovalent, primary fatty alcohols based on sperm oil, C_{12} – 5 to 7 per cent; C_{14} – 14 to 15 per cent; C_{16} – 30 per cent; C_{18} – 33 to 34 per cent; C_{20} and C_{22} – 12 to 20 per cent; acid number 0; sap. no. below 2; iodine no. below 1; solidification point 40 to 45°C.

Primary fatty alcohols based on coconut oil, namely C_{10} (decyl), C_{12} (lauryl/decyl), C_{14} (myristil/tetradecylalcohol) and C_{16} (cetyl/hexadecyl).

Free Alkali in Milled Soap

WHEN considering superfatting soap additives the necessary free alkali content of the soap must be kept in mind. Correct free sodium hydroxide content in soap ranges from 0.02 to 0.03 per cent. No superfatting agent with a higher saponification number may be used. None of the above mentioned agents will lead to saponification of the free alkali. Ricinoleic acid is recommended as a neutralizing agent by some who maintain that it does not cause rancidity even when used in excessive amounts. However, ricinoleic acid as such does not remain free but forms a sour soap which then turns rancid. The author does not recommend castor oil for use in high grade soaps. To make ricinoleic acid less reactive it could be worked into a fine o/w type emulsion prior to incorporation in the soap. Neutralization would then occur only during washing.

Vitamin F glycerine ester is an established preventive of skin diseases and lends itself readily to incorporation in fine cosmetic soaps.

Glycerine Replacements

SORBITOL, a hexavalent polyalcohol, $C_6H_8(OH)_6$, molecular weight: 182.2, occurs widely in nature and is a component of many fruits. Formerly derived from the berry of the mountan ash (rowan berry), it is now made by hydrogen reduction of glucose. A 67 per cent solution of sorbitol can very well take the place of glycerine in soap. Less hygroscopic than glycerine it does not remove moisture from the skin, does not reduce foaming power, is not volatile and is free from residue.

Phosphates improve and stabilize the lather owing to their complexing and water softening properties. However, excessive quantities of phosphates may impair the milling properties of the soap, a risk which may be counteracted by the use of lanolin, CMC, or the polymerized high molecular organic acid. Phosphates should be dissolved in distilled or ionized water.

Soap Stabilizers

ROSIN as a stabilizer in soap is problematic. Sodium thiosulfate is well tried and proven for this purpose. Phosphates are complexing agents and by eliminating the catalytic effects of metal salts prevent self oxidation of soap. Diphenylguanidine has been introduced as a soap stabilizer in the United States. Other soap preservatives include ammonium, sodium or mercury thiocyanate, added during the boiling process; or tin chloride added to the hot molten soap. Waterglass gives considerable general protection against rancidity. The author has worked with one to two per cent waterglass as the only stabilizer for a considerable time without finding undesirable changes in the product. Oxidation and discoloration owing to the presence of metal salts is prevented also by monophenyl guanidine, 0.01 to 0.5 per cent. Other stabilizers are N-phenyl-N'-cyclohexylthiourea and n-phenyl-N'-cyanothiourea.

Chlorophyllin

AMONG derivatives of leaf chlorophyll, sodium-copper-chlorophyllin was found to impart to the soap a stronger and more lightfast color than the magnesium salt. While coloring the soap green-chlorophyllin does not color the lather or the wash. Used as complementary color it serves to brighten yellowish tones. It may be added to the lye or the charge before or after saponification. If intended as a deodorant in soap for daily use the product should contain three to six per cent chlorophyllin.

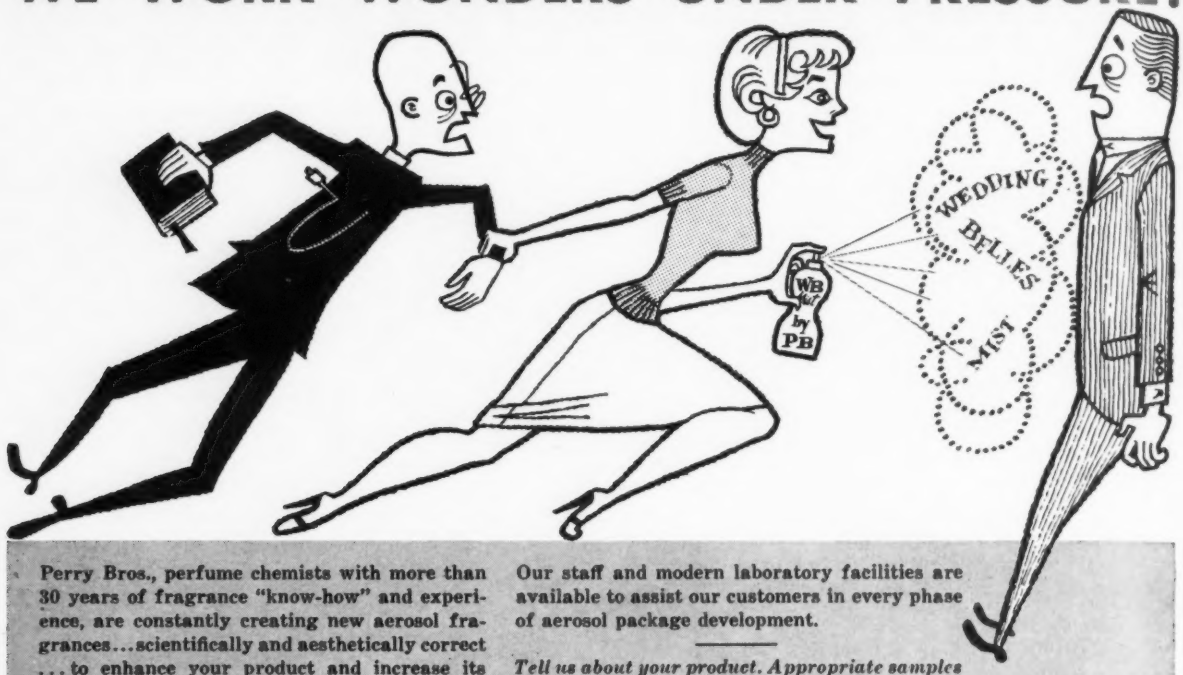
Bacteriostats

GERMICIDES and deodorizing agents may be added to the soap chips in the milling machine or to the soap mass in the crutcher. For general use the author recommends addition of 1.5 to two per cent, for medicinal or physician's use three per cent. Prior to incorporation in the soap the germicidal agent should be emulsified in CMC or the organic acid. As an alternative it may first be pasted with perfume oil and a superfatting agent and then turned into a readily dispersible emulsion by addition of a sufficient amount of mineral oil.

Other Additives

HANDS washed in a gelatine sizing solution are clean and feel very smooth after such treatment. Natural hydrophylic colloids such as solutions of gum arabic or tragacanth, of carragheen and alkali alginates incorporated in soap have the same effect in addition to boost-

WE WORK WONDERS UNDER PRESSURE!

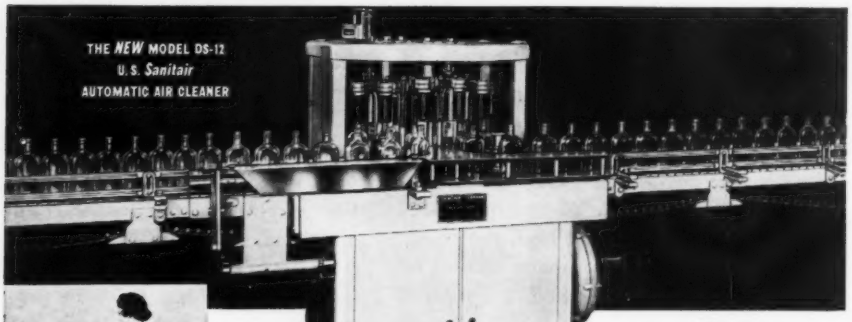


Perry Bros., perfume chemists with more than 30 years of fragrance "know-how" and experience, are constantly creating new aerosol fragrances...scientifically and aesthetically correct ...to enhance your product and increase its sales appeal.

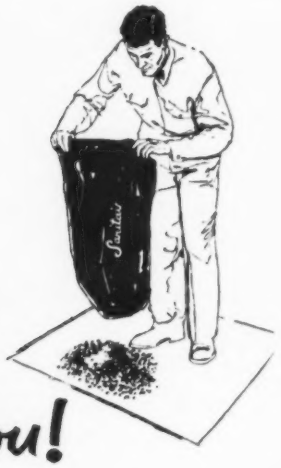
Our staff and modern laboratory facilities are available to assist our customers in every phase of aerosol package development.

Tell us about your product. Appropriate samples will be forwarded without obligation.

"Perfection through Research" **PERRY BROS., INC.** *Manufacturing Perfume Chemists*
61-12 Thirty Second Ave., Woodside 77, Long Island, N. Y., RAvenswood 1-3636, Sales offices in major cities



THE E-Z TWO-TUBE AIR CLEANER. Containers inverted over air valves, two at a time, up to 40 per minute. Blows carton lint, dust, etc. out of new containers; any size or type. Send for the E-Z Bulletin.



the "Catch" will amaze you!

OF COURSE your containers are clean . . . they usually come to you in cartons. Yet, to be sure, run them through a U. S. Sanitair and be amazed at the "catch" of dust, carton lint, etc., from supposedly clean containers.

Throughout the packaging world, the U. S. Sanitair is widely adopted as the sure sanitary precaution. Many find it essential to product uniformity; to safeguard the material content of their products; or as a precaution against failure of aerosol valves.

Built in models of varying capacities with container size changeover. Handle all size container openings including AGST, wide-mouth and aerosol-valve finishes. Send for the "Sanitair Bulletin" now.

FOR RINSING any size or shape bottles or jars. The U. S. Rotary Rinser cleans both insides and outsides of containers. For water, steam or air. Send for the Rotary Rinser Bulletin.

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SPECIALISTS IN LIQUID FILLING AND CONTAINER CLEANING EQUIPMENT

ing the foaming properties.

Technique

IN all instances the soap improver should be added in the form of an aqueous solution emulsified in the superfatting agents and other emulsifiers. If such oil in water emulsions are used, premature reaction of the soap with the additive or vice versa is largely prevented and the additive becomes effective only when the soap is used.

Excellent emulsions are made by the use of homogenizers. Such apparatus is, however, expensive. Mixing machines of high r.p.m. and equipped with special devices for the purpose can make perfectly good emulsions.

Translated and abstracted from a paper by K. L. Weber, which appeared in full in three installments, *Seifen-Oele-Fette-Wachse*, 1957, Nos. 5, 6, and 7.

—★—

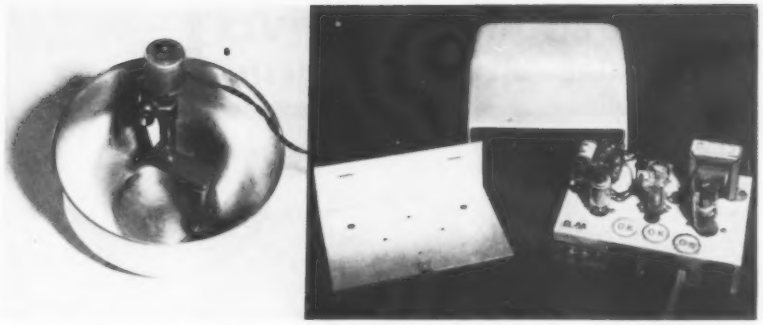
New Young Ribbon Mixers

A new line of portable horizontal ribbon mixers designed for mixing dry, free flowing powders or granular materials, was introduced recently by Young Machinery Co., Muncy, Pa. The mixers, available in many different sizes, may be obtained in carbon steel, stainless steel and monel metal, with or without heating or cooling jackets. The machines are furnished with either single or double ribbon or ribbon and paddle agitators and have hinged covers with quick opening clamps and marine-type compression packing glands and anti-friction outboard bearings.

—★—

New Etna Bulletin

A new four-page bulletin describing its new electronic chemical feeder was issued last month by Etna Electronics, Inc., Cortland, N. Y. The unit is designed for commercial dishwashing machines used in hotel, restaurant and institution kitchens. Ease of installation and accuracy of control of bath strength and temperature, and dispensing of chemical cleaning compound into bath, is claimed for the new feeder. The fully-illustrated folder also contains specifications and complete information about individual parts of the feeder, which is tradenamed "Sensi-feed." Copies of the bulletin may be obtained from the company.



Major components of new electronic chemical feeder of Etna Electronics Inc., Cortland, N.Y., for use on commercial dishwashing machines. At left is bowl into which detergent is fed. At right is main electronic control device which regulates rate of feed.

—★—

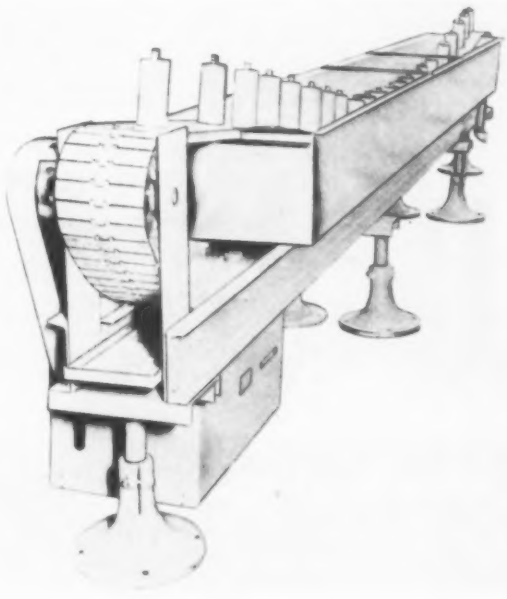
New Beckman Brochure

A new brochure describing its recently developed industrial gas chromatograph, was issued last month by Beckman Instruments, Inc., Fullerton, Calif. The new implement, designated "Model 220," is believed to be one of the first of its kind to bring gas chromatography to process instrumentation. The four-page booklet, which is fully illustrated, also lists applications and specifications of the product. Copies of the brochure may be obtained from the company, 2500 Fullerton Rd., Fullerton.

—★—

New Surfactants Bulletin

A new bulletin on surface active agents used in the soap, detergent and related industries, was published recently by American Cyanamid Co., Manufacturers Chemicals Department, 30 Rockefeller Plaza, New York 20. The new booklet gives technical data on seven types of "Aerosol" surface agents offered in commercial quantities by Cyanamid, including their use in basic formulations, data for testing effectiveness and information on storage and handling. In addition, the bulletin covers the role of surfactants in the manufacture of many chemical specialties. Copies of the booklet are available from American Cyanamid.



New "Styl-O-Matic" heat and leak test tank of Island Equipment Co., Long Island City, N.Y. Unit is designed to test aerosols automatically. It consists of tank and movable chain belt that carries aerosol down into tank and up out of it. Chain is stainless steel "Rex TableTop" chain and is available in widths for single or double rows of aerosols. Cans are prevented from floating or slipping on incline and decline by magnets attached to the chain track. Tank itself may be made of stainless or hot dipped galvanized steel.

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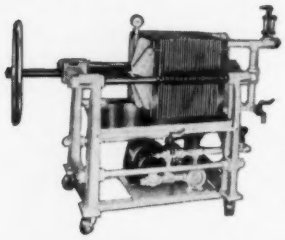
ERTEL MODEL EFS FILTER

Designed for use with any type filtering medium. Uses 10 to 40 filtering surfaces 12"x12" square. Filter media creates its own gasket, thus rubber washers are eliminated. Nickel plated bronze or all stainless steel circulatory passages.



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Comparison and operation records prove this 16" square filter unmatched in performance. Fully described in catalog. Ask for your copy.

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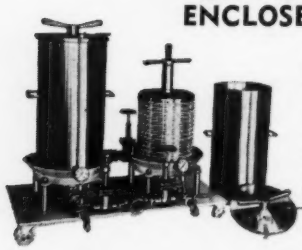
Available in ten uniform grades for all filters up to 25" square. Manufactured under rigid control, they are acid treated to meet Ertel standards of low leachable calcium and iron content. As a double check, these pads are analyzed periodically by an independent laboratory . . . reports of these tests are available at any time. A complimentary set-up of these pads for your present filter is available upon request.

ECD MODEL ENCLOSED DISC FILTER



Incorporates the outstanding feature of independent closing of filtering elements thus providing a positive seal. A unit built by engineers for trouble-free operation. Twin cylinder unit illustrated—also available with single cylinder for smaller capacities.

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Victor Grignard

(1871-1935)

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Book Reviews

Index Microbiology Terms

DICTIONARY OF MICROBIOLOGY. By Morris B. Jacobs, Department of Air Pollution Control, New York City; Maurice J. Gerstein, Department of Biology, William H. Maxwell, Vocational High School, Brooklyn, N. Y.; and William G. Walter, Professor of Bacteriology, Montana State College, Bozeman. D. Van Nostrand Co., New York. March 1957, 276 *pages, six by nine and a quarter inches, cloth bound, price* $6.75.

Several thousands terms commonly used in microbiology, bacteriology, micology, virology and a number of related fields, are defined and alphabetically listed in this ready reference volume. Definitions are lucid and succinct, cross indexing is generous and helpful, but trade designations are in no way distinguishable from generic terms, which seems a pity. Industrial significance of micro-organisms in the production of antibiotics, fermented beverages, milk and other daily products, their role in water and air pollution problems, in agriculture and a host of other fields is well covered. Culture media and methods, apparatus, procedures and other stock-in-trade of the microbiologist are included.

Workers concerned with diseases of men, animals, and plants; biochemists; food chemists and sanitary engineers; and scientists in many other fields will find this dictionary a sound reference book.

—— ★ ——

Solvents Text Revised

SOLVENTS. By Thomas H. Durrans, seventh edition, D. Van Nostrand Co., New York, April, 1957, 244 *pages, cloth bound, five and a half by eight and a half inches, price* $8.00.

This is volume four of a series of mongraphs on applied chemistry founded by the late E. Howard Tripp, and a revision of a well known classic. The general structure of previous editions has been preserved but details added to include new developments. Obsolete information has been discarded. The first edition of *Solvents* appeared in 1930. The book is printed in England, and the fact that revised editions appeared in 1944 and 1950 and a reprint in 1946, during years of great scarcities and production problems, is a witness to the work's importance.

—— ★ ——

New Diversey Booklet

A new booklet describing how its "Diversol CX" bactericide helps control corrosion of stainless steel was issued recently by Diversey Corp., Chicago. Entitled "Non-Corrosive Sanitizing of Stainless Steel," the 16-page brochure also provides information on types of corrosion in processing equipment and useful tips on how to avoid it.

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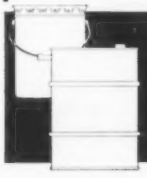

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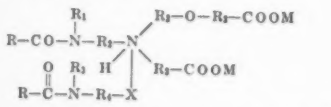
NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine. MacNair - Dorland Co., 254 W. 31st Street, New York 1, N. Y., and remitting 50c for each copy desired. For orders received from outside of the United States the cost will be $1.00 per copy.

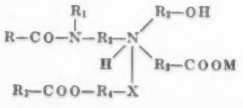
Nos. 2,781,370-76. Detergent Sulphonic Acids and Sulphate Salts of Certain Amphoteric Detergents, patented by Hans Mannheimer, New York.

No. 2,781,370 reveals a compound of the following formula:



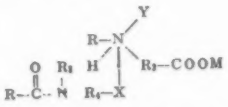
in which R is a hydrocarbon radical of 4–18 carbon atoms; R_2 is an organic group selected from the class consisting of (a) aliphatic hydrocarbon groups of 1–4 carbon atoms; (b) hydroxy substituted aliphatic hydrocarbon groups of 1–4 carbon atoms, (c) aliphatic ether groups, each of said ether groups having at least one ether oxygen linkage therein and otherwise being hydrocarbon of 2–4 carbon atoms, (d) aliphatic ether groups, each of said groups having at least one ether oxygen linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–4 carbon atoms, (e) aliphatic keto groups, each of said groups having at least one carbonyl linkage therein and otherwise being hydrocarbon of 2–4 carbon atoms, (f) aliphatic keto groups, with each of said groups having at least one carbonyl linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–4 carbon atoms, (g) aliphatic groups having keto carbonyl and ether oxygen linkage therein, and otherwise being hydrocarbon of 3–4 carbon atoms, (h) aliphatic groups, each of said groups having keto carbonyl and ether oxygen linkages therein and otherwise being hydroxy substituted hydrocarbon of 3–4 carbon atoms; R_1 is selected from the group consisting of hydrogen and monovalent radicals otherwise defined in said (a)–(h); R_3 is selected from the group consisting of (g) hydrogen, (h) aliphatic hydrocarbon radicals of 1–8 carbon atoms, (i) hydroxy substituted aliphatic hydrocarbon radicals of 1–8 carbon atoms, (j) aliphatic radicals, each of said radicals having at least one ether oxygen linkage therein and otherwise being hydrocarbon of 2–8 carbon atoms, (k) aliphatic radicals, each of said radicals having at least one ether oxygen linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–8 carbon atoms, (l) aliphatic radicals, each of said radicals having at least one keto carbonyl linkage therein and otherwise being hydrocarbon of 2–8 carbon atoms, (m) aliphatic radicals each of said radicals having at least one keto carbonyl linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–8 carbon atoms; R_4 is selected from the group consisting of (n) aliphatic, aromatic, and aromatic-aliphatic hydrocarbon groups of 1–12 carbon atoms, (o) hydroxy substituted aliphatic, aromatic and aromatic-aliphatic hydrocarbon groups of 1–12 carbon atoms, (p) aliphatic, aromatic and aromatic-aliphatic groups having at least one ether oxygen linkage therein and otherwise being hydrocarbon of 2–12 carbon atoms, (q) aliphatic, aromatic and aromatic-aliphatic groups, each of said groups having at least one ether oxygen linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–12 carbon atoms, (r) aliphatic, aromatic and aromatic-aliphatic groups, each of said groups having a keto carbonyl linkage therein and otherwise being hydrocarbon of 2–12 carbon atoms, (s) aliphatic, aromatic and aromatic-aliphatic groups, each of said groups having a keto carbonyl linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–12 carbon atoms, (t) aliphatic, aromatic and aromatic-aliphatic groups, each of said groups including a —CONH— linkage therein and otherwise being hydrocarbon of 2–12 carbon atoms, (u) aliphatic, aromatic and aromatic-aliphatic groups, each of said groups including a —CONH— linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–12 carbon atoms; X is selected from the group consisting of (SO_3) and (O—SO_3); and M is an alkali metal.

No. 2,781,371 covers a compound of the following formula:



in which R is a hydrocarbon radical of 4–18 carbon atoms; R_2 is an organic group selected from the class consisting of (a) aliphatic hydrocarbon groups of 1–4 carbon atoms, (b) hydroxy substituted aliphatic hydrocarbon groups of 1–4 carbon atoms, (c) aliphatic ether groups, each of said ether groups having an ether oxygen linkage therein and otherwise being hydrocarbon of 2–4 carbon atoms, (d) aliphatic ether groups, each of said groups having an ether oxygen linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–4 carbon atoms, (e) aliphatic keto groups, each of said groups having a carbonyl linkage therein and otherwise being hydrocarbon of 2–4 carbon atoms, (f) aliphatic keto groups, each of said groups having a carbonyl linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–4 carbon atoms; R_1 is selected from the group consisting of hydrogen and monovalent radicals otherwise defined in said (a)-(f); R_3 is selected from the group consisting of (g) aliphatic and aliphatic-aromatic hydrocarbon radicals of 6–18 carbon atoms, with the aliphatic-aromatic hydrocarbon radicals, each having an aliphatic radical of at least 6 carbon atoms; R_4 is selected from the group consisting of (h) aliphatic hydrocarbon groups of 2–12 carbon atoms, (i) hydroxy substituted aliphatic hydrocarbon groups of 2–12 carbon atoms, (j) aliphatic ether groups, each of said groups having at least one ether oxygen linkage therein, and otherwise being hydrocarbon of 2–12 carbon atoms, (k) hydroxy substituted aliphatic ether groups, each of said groups having at least one ether oxygen linkage therein, and otherwise being hydroxy substituted hydrocarbon of 2–12 carbon atoms, (l) aliphatic groups, each group containing a —CONH— linkage therein and otherwise being hydrocarbon of 2–12 carbon atoms; X is a radical selected from the group consisting of —SO_3 and —OSO_3; and M is an alkali metal.

No. 2,781,372 covers a compound of the following formula:



in which R is a hydrocarbon radical of 4–18 carbon atoms; Y is selected from the class consisting of R_5 and R_7—COOM; R_2 being an organic group selected from the class consisting of (a) aliphatic, aromatic and aromatic-aliphatic hydrocarbon groups of 1–12 carbon atoms, (b) hydroxy substituted aliphatic hydrocarbon groups of 1–12 carbon atoms, (c) aliphatic ether oxygen groups, each of said groups having at least one ether linkage therein and otherwise being hydrocarbon of 2–12 carbon atoms, (d) aliphatic ether groups, each of said groups having at least one ether oxygen linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–12 carbon atoms, (e) aliphatic keto groups, each of said groups having carbonyl linkage therein and otherwise being hydrocarbon of 2–12 carbon atoms, (f) aliphatic keto groups, each of said groups having carbonyl linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–12 carbon atoms, (g) aliphatic keto-ether groups, each of said groups having carbonyl and ether oxygen linkages therein and otherwise being hydroxy substituted hydrocarbon of 2–12 carbon atoms; R_6 is selected from the class consisting of (h) hydrogen and (i) monovalent radicals otherwise defined in (a)–(g); R_5 is selected from the class consisting of (j) hydrogen, (k) aliphatic hydrocarbon radicals of 1–8 carbon atoms, (l) hydroxy substituted hydrocarbon radicals of 1–8 carbon atoms, (m) aliphatic ether radicals, each of said radicals having at least one ether oxygen linkage therein and otherwise being hydrocarbon of 2–8 carbon atoms, (n) aliphatic ether radicals, each of said radicals having at least one ether oxygen linkage therein and otherwise being hydroxy substituted hydrocarbon

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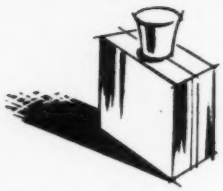

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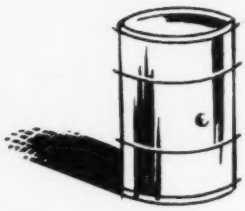

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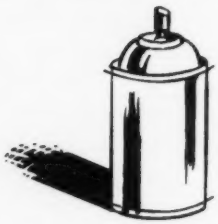

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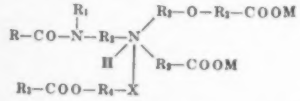
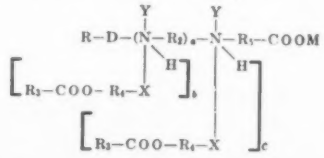
of 2–8 carbon atoms, (o) aliphatic keto radicals, each of said radicals having carbonyl linkage therein and otherwise being hydrocarbon of 2–8 carbon atoms, (p) aliphatic keto radicals, each of said radicals having carbonyl linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–8 carbon atoms; R_4 is selected from the class consisting of (q) aliphatic, aromatic and aliphatic-aromatic hydrocarbon groups of 1–12 carbon atoms, (r) aliphatic, aromatic and aromatic-aliphatic hydroxy substituted hydrocarbon groups of 1–12 carbon atoms, (s) aliphatic groups, each group having at least one ether oxygen linkage therein and otherwise being hydrocarbon of 2–12 carbon atoms, (t) aliphatic groups, each of said groups having at least one ether oxygen linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–12 carbon atoms, (u) aliphatic keto groups, each of said groups having carbonyl linkage therein and otherwise being hydrocarbon of 2–12 carbon atoms, (v) aliphatic keto groups, each of said groups having carbonyl linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–12 carbon atoms, (w) aliphatic groups, each of said groups including a —CONH— linkage therein and otherwise being hydrocarbon of 2–12 carbon atoms, (x) aliphatic groups, each of said groups including a —CONH— linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–12 carbon atoms; X is selected from the class of SO_3 and OSO_3; and M is an alkali metal.

No. 2,781,373 discloses a compound of the following formula:



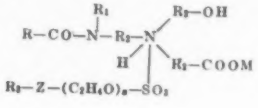
in which R is a hydrocarbon radical of 4–18 carbon atoms; R_2 is an organic group selected from the class consisting of (a) aliphatic hydrocarbon groups of 1–4 carbon atoms, (b) hydroxy substituted aliphatic hydrocarbon groups of 1–4 carbon atoms, (c) aliphatic ether groups, each of said ether groups having an ether oxygen linkage therein and otherwise being hydrocarbon of 2–4 carbon atoms, (d) aliphatic ether groups, each of said groups having an ether oxygen linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–4 carbon atoms, (e) aliphatic keto groups, each of said groups having a carbonyl linkage therein and otherwise being hydrocarbon of 2–4 carbon atoms, (f) aliphatic keto groups, each of said groups having a carbonyl linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–4 carbon atoms; R_1 is selected from the group consisting of hydrogen and monovalent radicals otherwise defined in said (a)–(f); R_3 is selected from the group consisting of (g) aliphatic and aliphatic-aromatic hydrocarbon radicals of 6–18 carbon atoms, with the aliphatic-aromatic hydrocarbon radicals, each having an aliphatic radical of at least 6 carbon atoms; R_4 is selected from the group consisting of (h) aliphatic hydrocarbon groups of 1–12 carbon atoms, (i) hydroxy substituted aliphatic hydrocarbon groups of 1–12 carbon atoms, (j) aliphatic ether groups, each of said groups having at least one ether oxygen linkage therein, and otherwise being hydrocarbon of 2–12 carbon atoms, (k) hydroxy substituted aliphatic ether groups, each of said groups having at least one either oxygen linkage therein, and otherwise being hydroxy substituted hydrocarbon of 2–12 carbon atoms, (l) aliphatic groups, each group containing a —CONH— linkage therein and otherwise being hydrocarbon of 2–12 carbon atoms; X is a radical selected from the group consisting of —SO_3 and —OSO_3; and M is an alkali metal.

No. 2,781,374 describes a compound of the following formula:



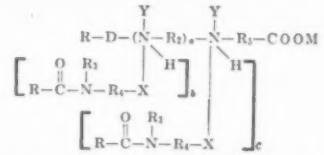
in which R is selected from the class consisting of aliphatic and aliphatic-aromatic hydrocarbon radicals of 6–18 carbon atoms; D is selected from the class consisting of CH_2 and $CONHR_2$; R_2 is selected from the class consisting of (a) aliphatic hydrocarbon radicals of 2–4 carbon atoms, (b) hydroxy substituted hydrocarbon radicals of 2–4 carbon atoms; Y is selected from the class consisting of (c) hydrogen, (d) R_7 and (e) R_5 COOM; R_5 is selected from the class consisting of (f) hydrocarbon groups of 1–4 carbon atoms, (g) hydroxy substituted hydrocarbon groups of 2–4 carbon atoms, (h) ether groups, each of said groups having an ether oxygen linkage therein and otherwise being hydrocarbon of 3–4 carbon atoms, (i) ether groups, each of said groups having an ether oxygen linkage therein and otherwise being hydroxy substituted hydrocarbon of 3–4 carbon atoms; R_7 is selected from the group consisting of CH_3 and radicals monovalent otherwise defined in R_2; a is 1–5; b is zero to 5 and no greater than a; c is zero to 1; the sum of b and c is at least 1; R_3 is selected from the group consisting of (j) aliphatic and aliphatic-aromatic hydrocarbon radicals of 6–18 carbon atoms, with the latter having an aliphatic hydrocarbon radical of at least 6 carbon atoms; R_4 is selected from the group consisting of (k) aliphatic hydrocarbon and hydroxy substituted hydrocarbon groups of 1–12 carbon atoms, (l) aliphatic ether groups, each of said groups having at least one ether oxygen linkage therein and otherwise being hydrocarbon of 2–12 carbon atoms, (m) aliphatic ether groups, each of said groups having at least one ether oxygen linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–12 carbon atoms, (n) aliphatic groups, each of said groups containing a —CONH— linkage therein and otherwise being hydrocarbon of 2–12 carbon atoms; X is selected from the group consisting of SO_3 and OSO_3; and M is an alkali metal.

No. 2,781,376 describes a compound of the following formula:



in which R is a hydrocarbon radical of 4 to 18 carbon atoms; R_2 is an organic group selected from the class consisting of (a) aliphatic hydrocarbon groups of 1–4 carbon atoms; (b) hydroxy substituted aliphatic hydrocarbon groups of 1–4 carbon atoms, (c) aliphatic ether groups, each of said ether groups having an ether oxygen linkage therein and otherwise being hydrocarbon of 2–4 carbon atoms, (d) aliphatic ether groups, each of said groups having an ether oxygen linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–4 carbon atoms, (e) aliphatic keto groups, each of said groups having a carbonyl linkage therein and otherwise being hydrocarbon of 2–4 carbon atoms, (f) aliphatic keto groups, with each of said groups having a carbonyl linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–4 carbon atoms; R_1 is selected from the group consisting of hydrogen and monovalent radicals otherwise defined in said (a)–(f); R_3 is a hydrocarbon radical of 6 to 20 carbon atoms; Z is an atom selected from the group consisting of oxygen and sulfur; x is a number of at least 1 and no greater than 5; and M is an alkali metal.

No. 2,781,375 covers a compound of the following formula:



in which R is selected from the class consisting of aliphatic and aliphatic-aromatic hydrocarbon radicals of 6–18 carbon atoms; D is selected from the class consisting of CH_2 and $CONHR_2$; R_2 is selected from the class consisting of (a) aliphatic hydrocarbon radicals of 2–4 carbon atoms, (b) hydroxy substituted hydrocarbon radicals of 2–4 carbon atoms; Y is selected from the class consisting of (c) hydrogen, (d) R_7 and (e) R_5 COOM; R_5 is selected from the class consisting of (f) hydrocarbon groups of 1–4 carbon atoms, (g) hydroxy substituted hydrocarbon groups of 2–4 carbon atoms, (h) ether groups, each of said groups having an ether oxygen linkage therein and otherwise being hydrocarbon of 3–4 carbon atoms, (i) ether groups, each of said groups having an ether oxygen linkage therein and otherwise being hydroxy substituted hydrocarbon of 3–4 carbon atoms; R_7 is selected from the group consisting of CH_3 and monovalent radicals otherwise defined in R_2; a is 1–5; b is zero to 5 and no greater than a; c is zero to 1; the sum of b and c is at least 1; R_3 is selected from the group consisting of (j) hydrogen, (k) aliphatic hydrocarbon and hydroxy substituted hydrocarbon radicals of 1–8 carbon atoms, (l) aliphatic ether radicals each having at least one ether oxygen linkage therein and otherwise being hydrocarbon of 2–8 carbon atoms, (m) aliphatic ether radicals, each having at least one ether oxygen linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–8 carbon atoms; R_4 is selected from the group consisting of (n) aliphatic

(*Turn to Page 235*)

PILOT
DETERGENTS

CONCENTRATED QUALITY CUTS COSTS

HD-90
90% Minimum active dodecyl benzene sodium sulfonate flake

SP-60
56% Minimum Active dodecyl benzene sodium sulfonate paste

ABS-99
96-98% Dodecyl benzene sulfonic acid

TS-60
60% Triethanolamine sulfonate liquid

MORE DETERGENT SUDS PER DOLLAR

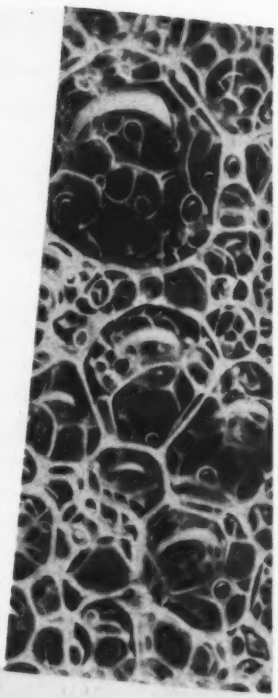
10% HIGHER CONCENTRATION AT EQUAL COST—*That is what these unique sulfonates make available to you. The four products above and those listed below give new possibilities in detergent formulation.*

- **AL-40** AMMONIUM SULFONATE IN ALCOHOL
- **SF-40** SODIUM DODECYL BENZENE SULFONATE FLAKE
- **KP-60** POTASSIUM DODECYL BENZENE SULFONATE PASTE
- **STS-85** SODIUM TOLUENE SULFONATE FLAKE

More detergent suds *immediately* increase consumer acceptance for your product! Cold processing by PILOT at temperatures below freezing produces superior sulfonates more homogeneously effective for such use as household sudsers, industrial detergents and scouring powders. In both dry powders and in liquid solutions, PILOT sulfonates are unique in concentration and purity levels.

Cold processing eliminates undesirable side reactions, hydrocarbon odors, and any rearrangement of the molecular structure. PILOT concentration and low sulfate properties *eliminate filtering;* give liquids the highest sudsing and cleaning powers obtainable.

Write today for formulas and samples of any of the PILOT concentrates. Only PILOT features highest concentration and premium quality at competitive prices! Immediately available in quantity lots.



LEADS THE WAY TO BETTER PRODUCTS
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Manufacturers of
Sulfonic Acid
Dodecyl Benzene Sulfonates
Sodium Toluene Sulfonate

Products and PROCESSES

Soil Retardant Shampoos

It is more satisfactory to build a rug shampoo formulation around "Ludox" colloidal silica than to incorporate the colloid into an existing shampoo, according to E. I. du Pont de Nemours & Co., Wilmington, Del., makers of "Ludox." These findings are reported in a study of "Ludox" based rug and upholstery shampoos and foam cleaners, published in a recent issue of *Chemical Briefs*, a du Pont house organ.

In general, cationic ingredients were found to cause gelation of "Ludox" by neutralizing the charge of the colloidal particles. Only anionic and nonionic surfactants are therefore recommended for use with "Ludox" in shampoo concentrates. Balanced blends of anionic and nonionic detergents are particularly satisfactory and yield shampoo concentrates with a high "Ludox" content. Diluted, such formulations clean effectively and the detergents do not interfere with the migration of "Ludox" onto the surface being treated. This migration of colloidal particles into crevices and pores reduces the number of places where dirt can become embedded. In this way "Ludox" protects the surface against future soiling.

Du Pont's study has resulted in the development of several basic rug cleaning formulations combining cleaning and anti-soil action with satisfactory foaming and stability characteristics. These formulas with mixing instructions are available from any Grasselli district office.

—★—

New Lignin Sulfonate

Crown Zellerbach Corp., San Francisco, recently announced the addition of "Orzan P" to its line of "Orzan" lignin sulfonates. The new product can be utilized as an emulsifier, an emulsion stabilizer, a flocculant, and a dispersant for cleaning compounds and insecticides. Further information, in the form of a 24-page technical brochure listing physical and chemical data and general specifications of the products, and samples, can be obtained from Crown Zellerbach Corp., Chemical Products Division, Camas 4, Washington.

—★—

New Fisher Solvent

A new chlorinated solvent, designed to remove oils, waxes, greases, tars and other contaminants and deposits from laboratory appliances, sample parts, and experimental set-ups, has been developed by Fisher Scientific Co., Fisher Building, Pittsburgh 19, it was announced recently. The new reagent grade solvent cleaner is claimed to be non-toxic and also safe for cleaning all types of metals. Retail price is $2.00 per quart and $7.90 per gallon.

—★—

Solvent Dispersible Wax

Dura Commodities Corp., New York, announced last month experimental marketing of a solvent-dispersible wax designated "FT-Wax MC." The material has a solidification point above 200°F., is snow white in color and water clear in the melt, with acid and saponification value —0. "FT-Wax MC" forms dispersions in mineral spirits or similar solvents which remain liquid even at freezing temperatures. A dispersion of 10 parts "FT-Wax MC" in 90 parts mineral spirits 300/390°F. B. R. is made as follows: melt wax and prewarm solvent slightly; add solvent very slowly and with vigorous agitation to the melted wax; if some of the wax crystallizes out of the solvent, reheat within safe limits until solution is clear. When all the solvent has been added continue high speed agitation while cooling to room temperature. When temperature is down to about 160 to 170°F., a slight whitening of the solution will occur, which is the start of the formation of the wax suspension. The finished product at room temperature should be water white and translucent and show less than five per cent settling from the top upon standing 24 hours undisturbed.

Applied to wood surfaces this suspension is said to have good gloss characteristics. Other applications suggested by Dura include sizings and water repellents for use in dry cleaning solvents, liquid floor polishes, polishing agents for plastics, etc. Non-polarity of "FT-Wax MC" makes for good moisture and fume resistance.

Dura Commodities Corp., with offices at 20 Vesey Street, New York 7, will supply samples to interested users on request.

—★—

New Standard Oil Process

Standard Oil Co., (Indiana), Chicago, recently announced the acquisition of a new hydrocarbon oxidation process which will permit production of phthalic anhydride, isophthalic acid, teraphthalic acid, dimethyl terephthalate, dimethyl isophthalate and benzoic acid in the same plant and from the same raw material. The plant, which will be built in the midwest at a cost in excess of $10 million, will have a capacity of 60 million pounds per year and will be operated by Amoco Chemicals Corp., Chicago, a Standard Oil affiliate.

—★—

Syndets in Sewage

The use of synthetic detergents has aggravated the ill effects of overloading of British sewage treatment plants, according to a recent British report. In a paper entitled "The Effect of Synthetic Detergents on the Biological Stabilization of Sewage", L. Barden and P. C. G. Isaac reported to a recent meeting of the Institution of Civil Engineers in London results of work done at the University of Durham. Laboratory biological filters were dosed with five generally used detergents: a primary and a secondary alkyl sulfate; an alkyl benzene sulfonate; a cationic qua-

(*Turn to Page* 243)

Perfumer's Notes

ON A FEW VERONA SPECIALTIES

ISO-BUTYL FURYL PROPIONATE — A top note of freshness and fine aroma for perfumes. Also used in flavors as an addition to Pineapple, because of its characteristic aroma and freshness.

ALPHA-METHYL CINNAMIC ALDEHYDE — A base for synthetic Oil of Cassia, to which it adds softness and stability.

CYCLAMAL® — Stable in perfumery. Will not discolor or irritate in cosmetics and soaps. Used up to 5% in perfume bouquets for its Lily of the Valley-Muguet character. The exceptional purity of Verona Cyclamal makes it outstanding for its clean, fresh aroma, free from fuzzy by-notes.

FLORANOL — A chemical with a soft, slightly fruity Rose note, but with considerable power and stability.

Write for further information.
Investigate these additional VERONA specialties:

CYCLAMAL CYCLO ACETAL • DIMETHYL OCTANOL SPECIAL
RESEDALIA • VERONOL • ROSANOL

Sole representative in the United States for J. & E. Sozio, Grasse, France.

Resinoides Essential Oils Natural Absolutes

Write us for our complete list of specialties and other aromatic chemicals.

PRODUCTS BUILD SALES FOR *Your* PRODUCTS

Aromatics Division

VERONA CHEMICAL COMPANY

Plant and Main Office: 26 Verona Avenue, Newark, N. J.
1210 Rosedale Avenue, Chicago, Ill.

PRODUCTION Clinic

By E. G. Thomssen, Ph. D.

NEW developments in photographic equipment and techniques have taken the camera from the laboratory right out into the plant. Production men are rapidly discovering the potentialities of the high speed motion, sequence or TV camera as an aid in many facets of industrial operations. Personnel education for increased efficiency and safety, product quality control, check on plant and equipment operation and maintenance problems, damage claims, lost motion, are just a few instances of the camera's potential usefulness.

One of the most spectacular demonstrations of the camera's importance as a tool of inspection is the slow-down and arrest of a propeller photographed while revolving at speeds up to 3,000 r.p.m. The whole set of blades or each individual blade can be taken and slowed down for minute scrutiny of flaws, both in material and operation.

Employee Education

THE camera as a tool of instruction is familiar to everyone. New employees can learn their tasks more easily and accurately from films and still pictures than they can from observation of the actual procedures. Photographic instruction permits repetition at will, intensive study of important detail, selective emphasis on correct and suppression of wrong procedures, and demonstrations of what not to do.

Safety in the factory can gain immeasurably by education and propaganda through movies and stills. Repetition is doubtless a most effective way to drive a message home and to make it stick. Furthermore, photographs can be slanted to make a careless man look ridiculous and silly and can harness vanity to serve safety.

Dr. E. G. Thomssen

Inspection and Records

PLANT engineering and maintenance can profit from the use of photography. A high speed camera can take pictures of a machine which does not perform satisfactorily. Projected at slow speed the pictorial record of the machine's operation may disclose the source of trouble and may thus save the production man's time and energy which might otherwise be spent in disassembling the equipment. Pictures of processing operations can actually lead to improvements in the final product. Deficiencies in containers causing difficulties in their passage through filling and closing machines may be revealed by photographic means.

Permanent records of breakdowns in machinery and equipment may serve to expedite repairs and to prevent future trouble. They should be preserved as should be records of processing operations. Both are more easily stored in the form of microfilms, 35mm or 70mm size, than as drawings or blueprints.

Photography may assist the production man in planning and scheduling of work. A master control board can be photographed at the end of the work week. Prints supplied to the foreman help him to set the work schedule for the week ahead.

Teams of employees engaged in a packaging operation may be photographed and the pictures examined for time lags and other operational faults. This procedure can lead not only to economies in man hours but also to improvements in the package. Furthermore, a photographic record of this type facilitates standardization of packaging operations located in different parts of the same plant or in different plants.

Miscellaneous Applications

DAMAGE and insurance claims can be settled more speedily and with less trouble if the claimant is able to produce pictorial evidence of damaged merchandise entering the plant.

In most research laboratories the camera has long been an indispensable piece of apparatus. Highly specialized equipment is used in every facet of microscopic and macroscopic laboratory work.

Research into production problems may profit from photographic observation of the behavior of materials during processing.

Once a manufacturer has decided to utilize photography in a number of applications he may find it profitable to install his own photo department in preference to employing the services of an outside photographer.

In addition to high speed motion picture and serial cameras, closed circuit television is finding increasing use in the demonstration of production procedure and of operation techniques for various machines. Pick-up cameras have so far been expensive and cumbersome. However, a new pocket-size TV camera especially designed for industrial use is being developed and is expected to reach the market in the near future.

Literature on the uses and applications of all types of pho-

HOW TO PICK A COLLOID MILL

QV-6-1 Laboratory Model has ½ HP universal motor with 5 gal. stainless steel jacketed hopper or pressure head for direct feed.

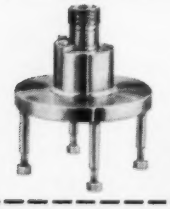
VT-11 Production Model has 15 or 20 HP motor with 20 gal. stainless steel jacketed hopper.

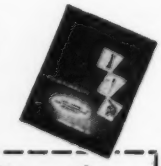
Picking the proper colloid mill—for the best possible results in grinding, emulsifying and homogenizing—isn't always easy. For most colloid mills are "look-alikes"—on the *outside*.

But if you stripped a *G-W Eppenbach Colloid Mill* down, you'd see fundamental differences—like the calibrated micrometer adjustment that assures accurate clearances between rotor and stator (which can be reproduced *exactly* at any time) ... the by-pass assembly that recirculates material until ready for discharge ... the *tangential* discharge outlet that allows material to flow out rapidly at a natural angle, for maximum production ... the safety stop studs for protection of the rotor-stator at small gap settings ... the component design of rotor-stator ... and many other quality features.

In addition, any laboratory, pilot plant, or production model with the standard, open, gravity fed hopper can easily be transferred into a unit suitable for continuous flow operations by interchanging the hopper with the pressure head assembly shown below.

All these features make the easy-to-use, easy-to-clean, easy-to-install Eppenbach Colloid Mill an exceptional long-term investment in service, economy and efficiency. Write for our new 24-page catalog.





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420 Lexington Ave., New York 17, N. Y.

Yes, please, send me your new Eppenbach Catalog.

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Company_____

Address_____

City_____

tographic equipment in the processing industries can be obtained from major optical manufacturers.

Outsert Applicator

An outsert applicator which continuously tapes an outserted circular to any predetermined point has been developed by Pfaudler Co., Rochester, N. Y. Capable of handling 220 containers a minute, the machine is said to require little space and to fit easily into any production line.

New pH Meter

A self-contained pH meter in a portable waterproof case has been developed by Analytical Measurements, Inc., Chatham, N. J. The instrument gives instant direct readings, requiring no holding down of buttons or turning of dials. No supports, holders, beakers, and separate electrodes are needed.

Bulk Handling of Powders

Powdered materials such as phosphates, soda ash, borax, etc., are handled economically and under sanitary conditions by the "Fluidizer" system made by Superior Separator Co., Hopkins, Minn. Units consisting of a valve, blower, and conveying line come in a range of sizes. Simple lines are available and systems varied for switching stations, remote and automatic diverters, and pressure switches.

Lanolin Technical Brochure

ROBINSON, WAGNER CO., Mamaroneck, N. Y., recently sent us their product bulletin #52 entitled "Lanolin." This complete and elaborate brochure is the most useful and informative work on this product that has ever come to our attention. It deserves a permanent place in the files of any chemical library. The brochure gives a large amount of useful information on the history, production, composition and the chemical and physical properties, of lanolin. In addition it lists uses, grades and guiding formulas for the making of cosmetics, emulsions, pharmaceuticals and soaps which incorporate lanolin and its derivatives. Since the company has been a major producer of lanolin in large quantities since 1916, the formulations are authentic.

This brochure is beautifully printed. The illustrations add considerably to its value and attractiveness.

Thickening Agent

A LOW cost thickening agent for adjusting viscosity is now available from Burtonite Co., 166 Chestnut St., Nutley, N. J. Tradenamed "Burtonite," the product is said to be barely pourable in concentrations of 2½ per cent in water; at one per cent, it gives extremely viscous solutions. "Burtonite" is claimed not to be affected by organic acids, alkalies or electrolytes. It is odorless, tasteless and non-toxic, according to the maker, and comes in both edible and technical grades.

—★—

New Fragrantizing Process

A new process of perfume printing which permits the scenting of virtually all paper stocks employed in printing today, was introduced recently by Frank Orlandi, manufacturer of perfumed specialties. The new process is applicable to printed or lithographed business cards, letterheads, brochures, book marks, package inserts, product tags, direct mail literature, catalogs and magazine adds.

Mr. Orlandi added that material perfumed by this process retains the fragrance 30 to 60 days, and a year or more if wrapped and sealed. Complete information may be obtained from Frank Orlandi, 20 Beekman St., New York 38.

—★—

Entomology Awards

The six winners of the National 4-H Entomology Awards sponsored by Hercules Powder Co., Wilmington, Del., were announced at a recent 4-H Club congress. Each award carries a $300 college scholarship.

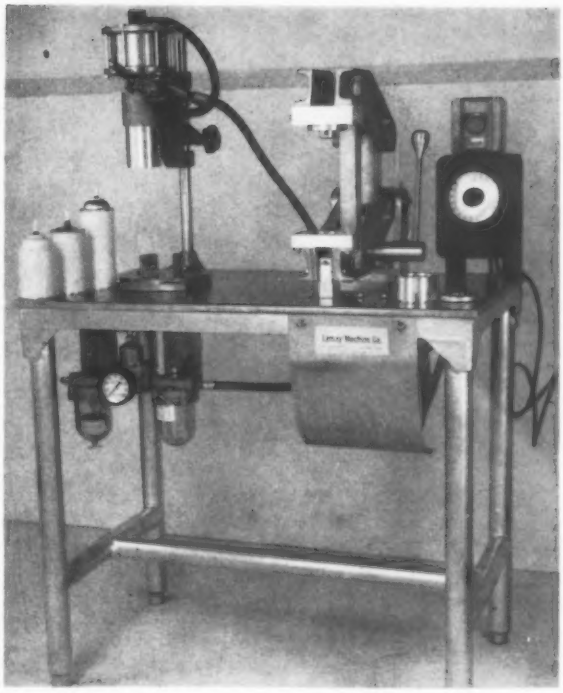
New Plastic Skin Coating

A new plastic coating designed to protect the skin against most organic solvents used in industrial processing, including esters, petroleum derivatives and other chlorinated, aromatic and aliphatic hydrocarbons, phenols, amines, epoxies, styrenes and plasticizers, was developed recently by Milburn Co., Detroit. Called "Ply No. 9 Gel," the new product is said to be non-toxic, impermeable to abrasive dust, fine powders and glass fibers, and can be washed off with or without soap. It consists of a plastic dispersed in a waterbased gelatin. When applied to the skin, the water base evaporates, leaving a skin-tight, elastic, plasticized film.

Injector type aerosol filler and laboratory pressure burette of JG Machine Works, 454 W. 46th St., New York 36. Unit operates on cans or bottles that have previously been filled, capped and crimped. By pressure filling, propellant is injected into filled containers at rates up to 30 injections per minute, depending upon quantity of propellant and container valve. Hand wheel operations allow for adjustment of the height of filling head, and a cooling coil for prevention of flashing are supplied as standard equipment. Injection capacities of propellant range up to 300 cc of liquid, and injections down to five grams with an accuracy of plus or minus .75 per cent have been obtained, maker says. Unit is air operated and electrically controlled. Air supply to each unit should be 100 pounds line pressure, with a supply capacity up to 20 cubic feet per minute.

Laboratory pressure burette designed for salvage of underweight containers is available in a stainless steel carrying case. Unit is supplied with three foot propellant hose and quick releasing air coupling.

New laboratory gasser-shaker recently added to line of Lemay Machine Co., St. Louis. Model No. LM - 3000 gasser and crimper permits laboratory tests to be made with exact final results of production pressure loading equipment. All parts are of aluminum castings and stainless steel to keep gasser sanitary and rust-free. Timer for controlling shaking time during gassing is variable so that correct stabilizing condition can be determined for different products. Pressure controls, for gas mixtures, are variable, and may be changed for different products. Unit has inserts to make it adjustable for 12 ounce Crown can with one inch opening, and 16 ounce cans of American and Continental Can Cos. with standard one-inch opening.



New Fritzsche Price List

Fritzsche Brothers, Inc., 76 Ninth Ave., New York 11, recently announced publication of its April, 1957 wholesale price list of essential oils, aromatic chemicals and related materials. The folder is divided into 15 sections covering perfuming materials and flavoring compounds. It is available only to wholesale purchasers of these materials.

★

New "Chemical Facts" Book

Publication of the third edition of "The Chemical Industry Facts Book," was announced last month by the Manufacturing Chemists' Association, 1625 Eye St., Washington 6, D. C. The 160-page, paper-bound volume is a basic reference work on the chemical industry, containing 15 chapters ranging from "A Brief History of the American Chemical Industry" to "Major Uses of Chemicals." The book is divided into three sections: "The Growth of the Chemical Industry"; "How the Chemical Industry Operates"; and "Chemicals in Everyday Life."

Also included is a special section on the aims and purposes of MCA. Member firms and organizations are listed in the appendix along with a glossary of important chemical terms. Copies may be obtained from MCA for $1.25. Discounts are available on bulk quantities.

★

New Plastic Snap-Cap

A new plastic snap-cap for sealing of collapsible tubes, was introduced recently by J. Mart Co., 9015 Wilshire Blvd., Beverly Hills, Calif. Designed in two halves, the cap bottom contains a dispensing nozzle which fits into the tube, while the upper half is connected to it by a plastic hinge. The snap-cap is available in most shapes, sizes and colors, is said to flip open easily and provide a leak-proof seal when closed.

spotlight on

uniformity, color stability
in oleic acid

Emersol® 211 Elaine

increased sales appeal of premium shampoo

If the color of your product changes with age or from batch to batch, then this customer experience may interest you . . . *Case History No. 22-42: A well-known manufacturer of premium shampoos replaced the ordinary single-distilled oleic acid in his formulation with Emersol 211 Low Titer Elaine because of its uniform color and greater resistance to color change during aging. The resultant uniform color of his shampoos produced greater consumer acceptance and subsequently greater sales.*

While uniformity of color was this manufacturer's primary concern, he found also that Emersol 211's outstanding oxidation stability, superior resistance to rancidity, uniform viscosity, and low unsaponifiable content, added materially to the overall quality and aging properties of his products. And since Emersol 211 costs no more than competitive grades, all these sales advantages were realized at no extra cost. Whatever products you are making, the replacement of an ordinary oleic acid by an Emersol Elaine will impart to them a high degree of color stability, oxidation stability, and resistance to rancidity. These factors, coupled with uniformity and all-around high quality, will make your products better, make them fresh and appealing, and keep them that way longer. So, if you are not already using an Emersol Elaine, why not order your next requirements from Emery? They cost no more than competitive grades so you have everything to gain, nothing to lose.

Emery

Fatty Acids & Derivatives
Plastolein Plasticizers
Twitchell Oils, Emulsifiers

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Warehouse stocks also in St. Louis, Buffalo, Baltimore and Los Angeles
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SOAP PLANT Observer.

By John W. McCutcheon

THE writer has been so close to quality control for so long that he imagined every thing worth saying had been said on the subject. However, he was left somewhat amazed by some views on quality control proferred by a group of bright young chemical engineers at a recent symposium at Columbia University. It is true, the young men could read about it. But frequently they do not know where to look. Furthermore, the way we train our young makes them neither willing nor particularly able to find out for themselves. We have led them to expect things to come to them the easy way.

At the risk of possibly offering something redundant we shall discuss quality control and speak of the duties of the chief chemist who makes the system work.

Quality Defined

THE actual meaning of the term "quality control" requires little defining other than its dictionary meaning. In the soap industry quality control is concerned with turning out a uniform product hour after hour and day after day. And it is not confined to a bar of soap; but applies also to the wrapper, and the container. In other words, quality control is concerned with getting the product into the hands of the consumer in the condition desired by the management. You could say that the product has to meet certain specifications. Often these specifications are elaborately written and distributed to key personnel including the technical director, the chemist, the foreman of the production department, and management. The office manager may also need a copy to supply certain facts to his accounting department. These facts, helpful to accounting, may include bar weights, actual soap content of the

product, etc. However, this information should be regarded as confidential and should not be broadcast indiscriminately. It represents a way of doing business which is quite important to the company and frequently it represents the result of years of study and research. The company may also have invested considerable funds in getting outside help to set up a quality control system.

Control Defined

THE above covers the "quality" angle. How about the "control" part? Briefly, and perhaps brutally, the object of a good control system is to place the blame where it belongs, if anything goes wrong. Conversely, the object of a poor control system is to stimulate "passing the buck."

For example, a bar soap comes out with black specks in it. The cutter says it is the framed soap; the framer says it's in the crutcher; the crutcher man says it's in the fatty acid he uses; and the fatty acid man claims his drums are dirty. By the way, dear reader, this is an actual case history! A thorough check reveals everyone is at fault. The drums are dirty, the soap is crutched near an open door where engines are belching black smoke; the framer was actually caught fishing for pieces of paper in the frames and the cutting table was placed by an alley-way where a clown was running a Baker lift truck up and down as fast as it would go to the accompaniment of a constant cloud of dust lifted off a dirty floor.

Control Measures

PLEASE realize this is a special case and may not be common in the soap industry as a whole. But it serves as a good example for our study, and it *is* a true case. How to correct it by quality control? The object in this case is to get the black specks out and keep them out. Obviously, you go back down the line and set up a standard for each step of the process to the point where no one can pass the buck. First, the distilled acids are inspected to see that they are clean. The distilling department is then told that its job is to deliver clean acids to the crutcher. Obviously the man in this job had the erroneous idea that he could spill the acids into anything, and that his job was done when he turned a valve. The crutcher man now gets clean stock. If a check is put on sampling every frame he drops for black specks, any dirt at this point is his responsibility.

The crutcher man won't like this at first and will squirm under the pressure. He can't work with closed doors, the roof leaks, he isn't allowed enough time to clean out between batches, he needs a new crutcher cover, the oil pan drips. At this point the quality control man must be firm – "no dirt." A splendid way to accomplish the desired purpose is to empower the quality controller to reject batches. This is like putting a gun in a marshal's hand and will produce wonderfully fast action. The leaks are fixed, the ceiling scrubbed and the doors screened. Often, as in this case, the crutcher man is right in his stand: he is working under poor conditions.

The next obvious step for control is the cutting and slabbing.

PUT IT RIGHT WHERE YOU WANT IT
and make it stick

pH
14
13
12
11
10
9
8
7
6
5
4
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1

How strong a cleaner do you need? Mild — Medium — Heavy Duty? You can peg the pH exactly where you want it with . . .

Cowles
DRYMET
Anhydrous Sodium Metasilicate

Cowles Drymet blends easily with caustic soda, carbonates, phosphates, soaps, synthetics. Drymet gives you better detergency—more thorough soil dispersion—more complete emulsifying.

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Cowles CHEMICAL COMPANY
CLEVELAND 3, OHIO

Samples are taken from the drier and examined for surface dirt. When the dirt exceeds a certain amount established as maximum allowable, the racks are rejected. This slows down our bus driver, cleans up the floors, and soon nice bright clean cakes of soap are flowing from the presses again. Business picks up and everyone gets a bonus.

Quality control is not necessarily chemical control. So far our only tests have been visual. However, in a modern, clean plant operating with reasonable efficiency you seldom run into a problem such as outlined above, which is extremely hard to correct, even with the cooperative effort of everyone from the management down.

However, other problems of a chemical nature may be at least equally difficult to solve. Sometimes such cases are even more complicated because the source of trouble is harder to locate. For instance, a bar soap may be off color for many reasons: the perfume is off; the fat base of the soap has been varied; the oils have been incorrectly bleached; or the wrapper contains unusual materials, such as sulfites.

The difficulty may be compounded by poor analytical methods; an uncooperative chemist, or a poor sampling procedure. Next month's column will continue this study and will deal particularly with the status of the chief chemist and his relation to quality control.

A tremendous fanfare of daily newspaper, television and radio advertising is accompanying the current introduction in the New York City marketing area of "Dove," Lever Brothers synthetic detergent bar. Samples of "Dove" began to reach New York City households by mail in mid-April in a drive that eventually will blanket the entire New York metropolitan marketing area, including northern New Jersey, Long Island and Connecticut as far north as Fairfield County. Lever would give out no indication of the number of samples of "Dove" to be given away, but estimates run into the hundreds of thousands and possibly the millions.

First test marketed in Davenport, Ia., in June, 1955, "Dove" was later introduced in other midwestern markets, notably Chicago, where its sales astonished even veteran soap marketers. Lever expects the product to be in national distribution by the end of the year.

The success of "Dove" in the retail market place seems to the writer to be the first real breakthrough by a synthetic detergent product in the bar toilet soap field, the last bastion of soap, and a market boasting sales of around $200,000,000 annually. Other synthetic bars have appeared from time to time, but none has made much of an impression, probably owing to apparent poor rinsability. Lever Brothers Co. has solved this problem and "Dove" deserves to be called a first in its field.

No doubt, many small soapers who are toilet bar specialists will sit around biting their nails and saying "only the big fellows can do this." However, in the writer's opinion, this is just a nervous spasm brought on by their own lack of initiative. The elements necessary for the manufacture of a synthetic bar have certainly been known and commercially available for several years. In fact, the writer presented a paper, a considerable portion of which was devoted to this subject, as early as 1954 at the First International Congress of Surface Activity in Paris.

Our prediction, made in a paper read before the 1955 spring meeting of the American Chemical Society, still stands. In it we said that by 1960 the toilet bar business will be 50 per cent synthetics.

Our congratulations to Lever and best wishes for the future of "Dove!"

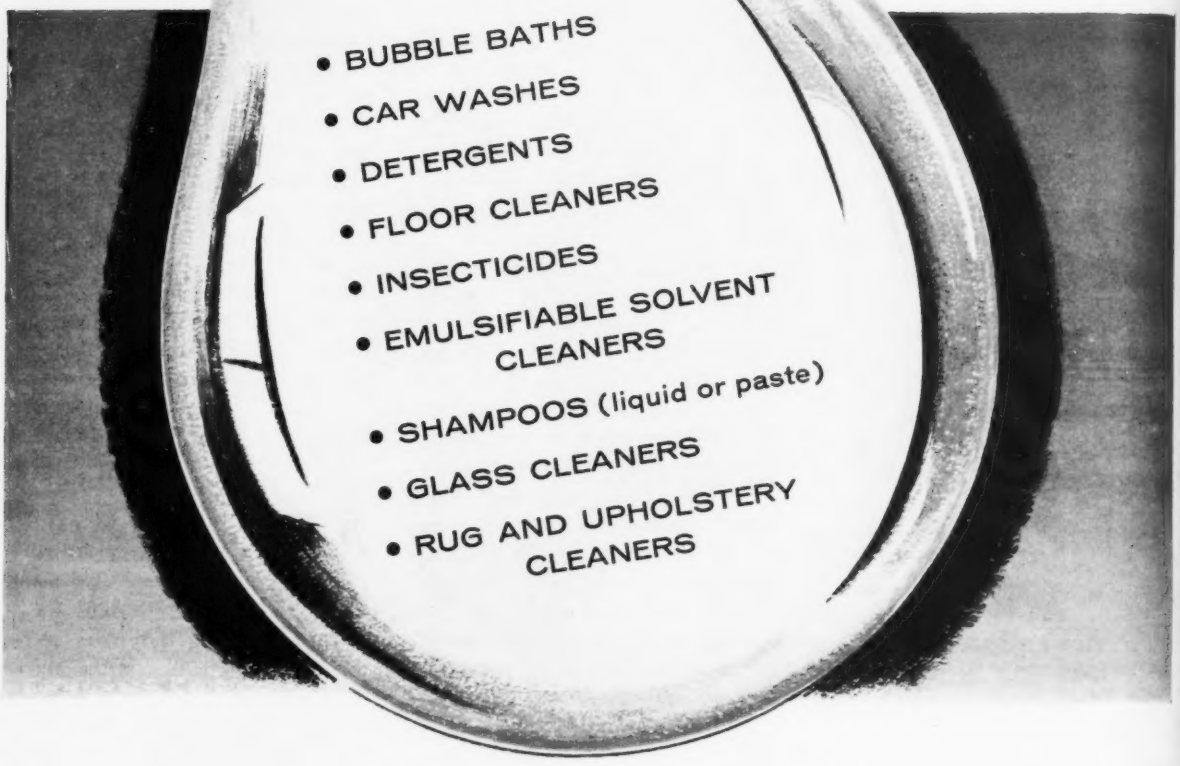
* * *

A BULLETIN was issued last month by Proctor & Schwartz Philadelphia, marking the firm's fiftieth anniversary in the service of the processing industries. Proctor & Schwartz ribbon driers are to be found in almost every plant making soap products. Their chief function today is in the preparation of high purity soap flakes and toilet soaps. One of the firm's most important fields of activity is in all branches of the textile industry.

New Detergent Perfume

"Detergerol Rose," a new fragrance for use in industrial and household detergents is described in a new folder recently issued by Aromatic Products, Inc., New York. The four-page bulletin also provides information on many of the firm's other aromatic specialties which are designed for use in powdered and liquid soaps and detergents, waterless hand cleaners, waxes and polishes and insecticides. Copies of the folder may be obtained from the company, 235 Fourth Ave., New York 3.

If you make one—or more—of these in liquid form



. . . you'll get better results every time with

No matter what kind of liquid cleaner or insecticide you formulate, you'll find Orvus WA Paste best for the job!

A neutral synthetic detergent and wetting agent whose active ingredient is mainly sodium alkyl sulphate, Orvus WA Paste offers manufacturers excellent sudsing, wetting and emulsifying properties. Its exceptional dispersing and penetrating characteristics help make your products perform better every time, too!

Orvus WA Paste offers many important additional advantages you'll soon discover when you start formulating with this top-quality detergent. For more information on specific applications or formulas, drop a postcard to . . .

ORVUS
WA PASTE

Procter & Gamble

Bulk Soap Sales Department
P. O. Box 599, Cincinnati 1, Ohio

News...

PEOPLE · PRODUCTS · PLANTS

Colgate Splits Operation

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P&G Acquires Clorox

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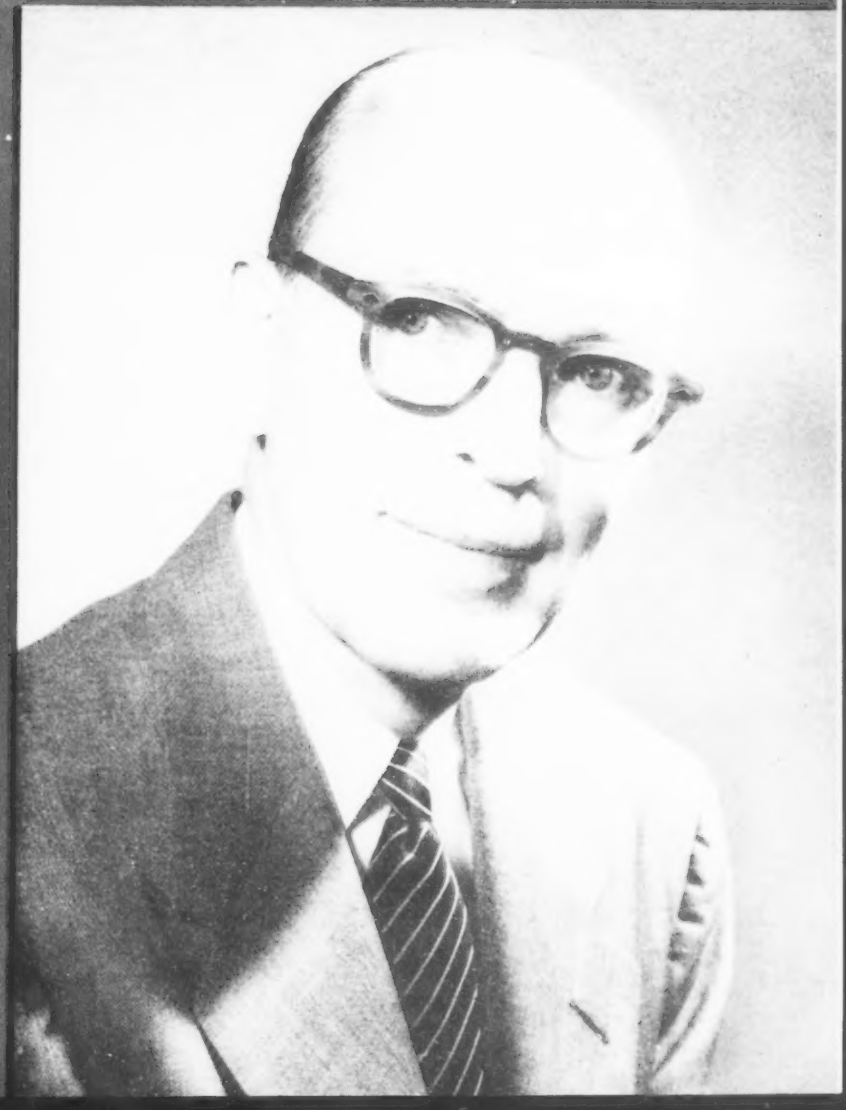
Varley Appoints Jackson

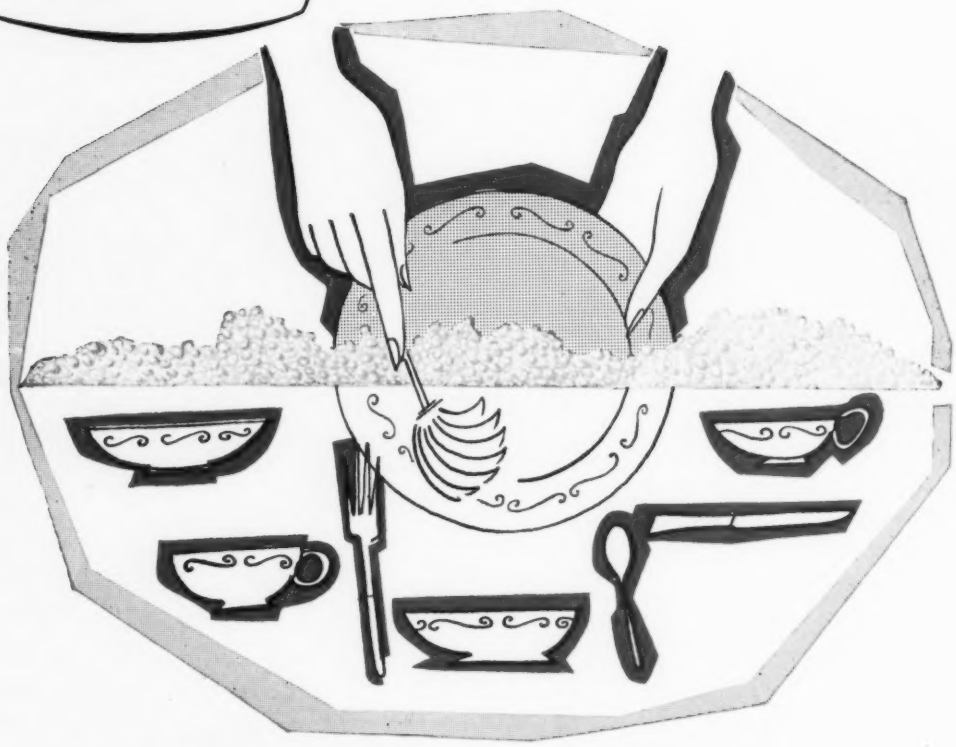
• • •

West Adopts New Name



E. C. Harbur has just been elected vice-president in charge of marketing of Boyle-Midway, Inc., New York. He joined American Home Products in 1953 as assistant to the president. Boyle-Midway is the household products division of American Home Products Corporation.

Chemicals by
Marchon



EMPILAN LP 2

foam booster and stabiliser

Empilan LP 2 is a new and economic additive for liquid detergents with particular affinities for the popular anionic types. Its presence synergistically boosts detergency and increases fat emulsifying power, thus permitting the formulation of highly concentrated detergent products. The imparting of a pleasant 'soft' feeling to anionic liquid detergent, and a gearing of foaming power to cleaning power, are among other desirable features of this new addition to the comprehensive range of chemicals by Marchon.

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Telegrams: Marchonpro, London, Telex.

News

Heads Murphy-Phoenix

Election of M. J. Murphy, Jr., as president of Murphy-Phoenix Co., Cleveland, was announced last

M. J. Murphy

month. He succeeds his father, M. J. Murphy, Sr., who died in February. Mr. Murphy formerly was vice-president, a position he had held since joining the company in 1946. He is a graduate of Case Institute of Technology with a degree in chemical engineering. He will be replaced as vice-president by Edwin F. Horak. Mr. Horak also serves as sales and advertising manager.

Murphy-Phoenix was founded in 1890 by the late Jeremiah T. Murphy, grandfather of the newly-elected president. Now operating as a division of the Phoenix Oil Co., the concern manufactures oil soap, wax remover, which it introduced in 1954, a window cleaner and a variety of metal working oils and compounds. The firm is also a member of the Association of American Soap and Glycerine Producers, Inc., New York.

★

Boyle-Midway V.P.

Election of E. C. Harbur as vice-president in charge of marketing of Boyle-Midway, Inc., was announced late last month by Strieder Schraffenberger, president. Mr. Harbur will be responsible for all matters affecting sales and sales promotion of Boyle-Midway, Inc., which is the household products division of American Home Products Corp., New York. Mr. Harbur joined American Home in 1953 as assistant to the president. He previously had served with Liggett & Myers Tobacco Co.

★

P & G Profit Up

Consolidated net profit of Procter & Gamble Co., Cincinnati, for the nine months ended Mar. 31 amounted to $51,520,833, equal to share earnings of $2.63, it was announced recently. In the corresponding period of the previous year the net was $47,452,816 or $2.44 per common share adjusted for the two-for-one stock split effected last June 1.

★

Adell Names Massey

Appointment of William J. Massey to the newly-created position of sales manager of Adell Chemical Co., Holyoke, Mass., was announced recently by Jacob L. Barowsky, president. For the past nine years, Mr. Massey had served with Hampden Brewing Co., Willimansett, Mass., where he was sales manager and advertising director. He previously had been associated for 15 years with Harvard Brewing Co., Lowell, Mass.

William J. Massey

Varley Names Jackson

Appointment of Jack Jackson as factory representative in Texas and Oklahoma, was an-

Jack Jackson

nounced recently by James Varley & Sons, Inc., St. Louis. According to the announcement, Mr. Jackson's appointment was prompted by the company's increased emphasis on sales promotion and a more concentrated selling effort in certain areas of the nation.

The complete line of Varley products will be carried at the Binyon-O'Keefe Storage Co., 2155 Oaklawn Blvd., Dallas, where shipment will be made to all points in the two states serviced by Mr. Jackson. Headquarters for Mr. Jackson will be at 4929 Newmoore Ave., Dallas.

★

Heads New Detergent Firm

William F. Tomlinson will direct operations of Surfacto Co., Inc., Blue Island, Ill., it was announced recently. The firm, producer of detergents and chemical specialties, was founded by Mr. Tomlinson in March. Mr. Tominson formerly was director of research and development of Stepan Chemical Co., Chicago. Prior to that he was associated with Fels & Co., Philadelphia. He is credited with development of several liquid synthetic detergents.

Lever Elects Moore

J. Warren Moore has been elected treasurer of Lever Brothers Co., New York, it was announced

J. Warren Moore

last month by E. Lee Talman, admistrative vice-president. He succeeds M. A. McManus, who continues as an officer of the company in the newly-created post of director of financial planning. Mr. Moore, who joined Lever in 1951, formerly was assistant treasurer. He will be replaced in that post by George F. Jones, manager of the firm's tax department. Mr. Jones joined Lever in 1927 in the accounting department.

—★—

Avon Sales Higher

Sales and earnings of Avon Products Co., New York, showed a slight increase in the first quarter of 1957, it was announced recently. Net sales totaled $19,578,661 as compared with $16,375,333 in the first three months of 1956. Net income in the first quarter of this year amounted to $1,366,426, equal to share earnings of 46 cents, as compared with $1,318,087 and 44 cents, in a similar period of the preceding year.

—★—

Peck's Buys Soap Business

Peck's Products Co., St. Louis, has acquired the soap business of Olin Mathieson Chemical Corp., Baltimore, it was announced last month.

The transaction covered sales rights, manufacturing rights, formulas and inventories of industrial and institutional specialty soaps formerly made by Puritan Co. and Genessee Research Corp., of Rochester, N. Y. These companies became part of Olin Mathieson in 1954. The products concerned include liquid surgical soaps and soap concentrates, oil soaps and liquid pine soaps.

No plant equipment was involved in the sale. Peck's Products will make the products in its St. Louis plant. Financial details of the transaction were not disclosed.

—★—

Anti-Freeze Sales Decline

More than 107,000,000 gallons of anti-freeze solutions were purchased in the United States during 1956, it was reported recently by the Chemical Specialties Manufacturers Association, New York. Basing its estimate on manufacturers' reports accounting for about 97 per cent of total production of such compounds, the CSMA said that consumption was down about 2.8 per cent over 1955 when its first anti-freeze survey indicated sales of 110,000,000 gallons. Although not covered in the survey, the CSMA estimated retail sales value of the 1956 output at $275,000,000.

The association's survey went on to report that four out of five purchasers of anti-freeze last year chose the higher-priced permanent, or ethylene glycol, type solutions. Methanol type products accounted for 23,000,000 gallons, or 21 per cent of the '56 sales.

—★—

New Beach Detergent

A new non-ionic, controlled suds detergent was introduced recently by Beach Soap Co., Lawrence, Mass. Called "Minisudz," the new detergent is said to be effective in removing all types of soil in both hard and soft water. In addition, the product is claimed to prevent the formation of lime soap scum on goods and washing machine wheels and to safeguard the wheels against corrosion. Literature describing the product in detail may be obtained from the company.

Rodriguez in New Post

Guillermo Q. Rodriguez has been named export manager of Piatt & Smillie Chemicals, Inc., St.

Guillermo Q. Rodriguez

Louis, it was announced early this month. In his new post, Mr. Rodriguez will be responsible for establishment of distributor outlets and company sales policy in Latin America. Prior to joining Piatt & Smillie, Mr. Rodriguez was Latin American representative for Ramsey Corp., a subsidiary of Thompson Products, Cleveland.

—★—

Diversey Earnings Rise

Net income and share earnings of Diversey Corp., Chicago, amounted to $69,935 and 27 cents in the first quarter of 1957, it was announced last month. This compared with an income of $47,242 and share earnings of 18 cents in the initial quarter of 1956.

—★—

Bradshaw-Praeger Elects

R. S. Bradshaw has been elected president of Bradshaw-Praeger & Co., Chicago, it was announced recently by the board of directors. He replaces R. Y. Bradshaw who died late last year. The elder Bradshaw had co-founded the firm in 1922 and served as president until his death. R. S. Bradshaw formerly was secretary. Officers re-elected include C. H. Praeger, Sr., vice-president; J. J. Rutherford, secretary-treasurer; C. H. Praeger, Jr., assistant secretary; and J. D. Rutherford, assistant treasurer.

Windsor Names Barber

Windsor Wax Co., Hoboken, N. J., has appointed E. L. Barber as sales representative in Maryland, Delaware, Virginia, western Pennsylvania and the District of Columbia, it was announced recently by Jacob Kahn, president. Mr. Barber also will continue to represent United Metal Cabinet Corp., Pottsville, Pa., in the same states. He will carry Windsor's complete line of wax products, wax coatings and compounds.

E. L. Barber

★

New Dow Glycerine Plant

Construction of a new synthetic glycerine plant at its Texas Division in Freeport, Tex., was announced last month by Dow Chemical Co., Midland, Mich. Scheduled for completion next March, the new unit will utilize Dow's own production process involving propylene and chlorine starting materials. The new plant, the second to be built at Freeport, will double Dow's present glycerine capacity, according to Dr. A. P. Beutel, Dow vice-president and general manager of the Texas Division. A synthetic glycerine plant with a capacity of 36 million pounds per year was opened there in June, 1955.

★

Sugar-Based Surfactant

Berkeley Chemical Corp., Berkeley Heights, N. J., recently announced production of a new sugar-based surface active agent at its pilot plant in that city. Called "Sucrodet D-600," the product is a recrystallized sucrose dipalmitate, designed for use in the detergent, pharmaceutical and cosmetic industries. A technical data sheet on "Sucrodet D-600" is now being prepared and may be obtained from Berkeley's New York sales agent, Millmaster Chemical Corp., 295 Madison Ave., New York 17.

★

C-P Splits Operations

Colgate-Palmolive Co., New York, is splitting its domestic business into two separate parts after nearly a century of highly-centralized operation.

Edward H. Little, chairman and president, recently announced that two new operating divisions have been created. One will handle household products, chiefly soaps and detergents. The other will market the entire Colgate-Palmolive line of toilet goods.

Mr. Little said each division will function in much the same manner as independent companies. William T. Miller whose election last month as a Colgate vice-president was announced last month, has been named vice-president in charge of the household products division. The vice-president in charge of the toilet goods division will be announced in the near future.

★

DCAT Names Stokes

Appointment of Sydney N. Stokes of van Ameringen-Haebler, Inc., New York, as chairman of the nominating commitee of the Drug, Chemical and Allied Trades Section of the New York Board of Trade, was announced last month by J. David Hayden, chairman. Other appointees to the nominating committee included Stanley I. Clark, Sterling Drug Co.; Charles M. Macauley, Charles M. Macauley & Associates; Leon W. Miller, Barrett Division, Allied Chemical & Dye Corp.; Lloyd I. Volckening, Ivers-Lee Co.

The committe will nominate members of the executive committee to be elected at the DCAT annual meeting to be held at Galen Hall, Wernersville, Pa., Sept. 19-21.

Armour Appoints King

Appointment of John A. King as director of research of Armour and Co., Chicago, was announced recently by Victor Conquest, vice-president in charge of research and development. Dr. King obtained his Ph.D. in 1942 from the University of Minnesota. Since that time he has been engaged in industrial research in the chemical and pharmaceutical fields.

John A. King

★

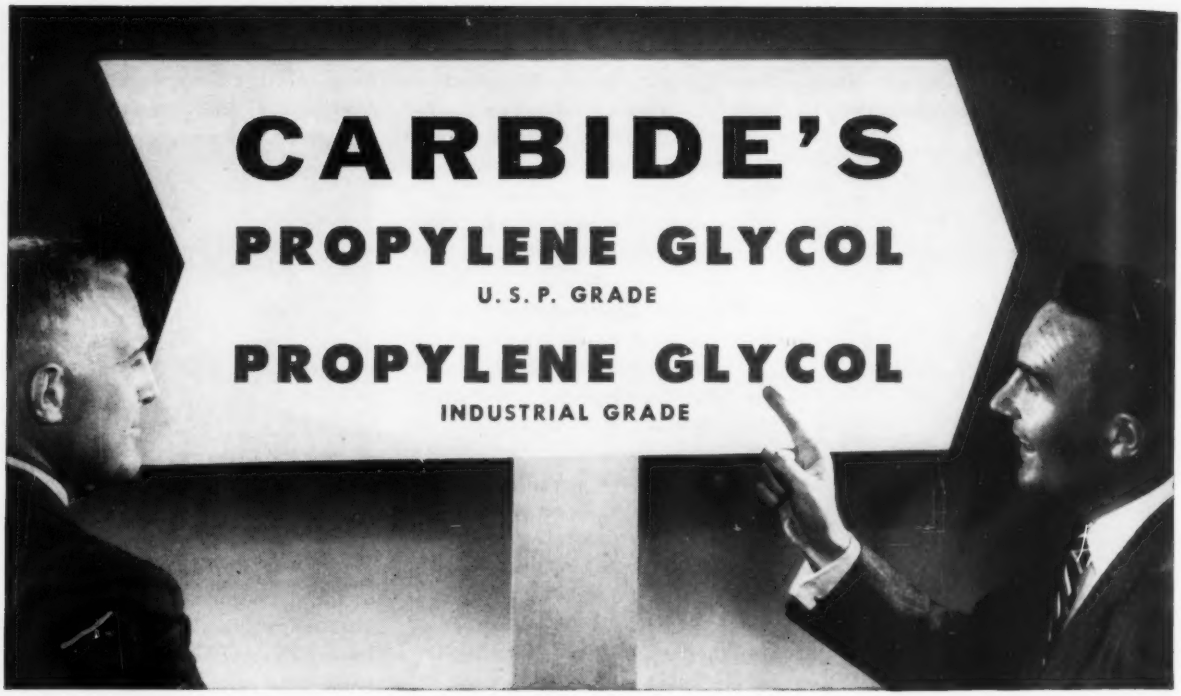
New Dispenser Globe

A new polyethylene plastic globe designed for its "Peer 100," dispenser, was introduced recently by Moore Brothers Co., New York. Believed to be the first of its type on the market, the new globe is said to be resistant to all soap and detergent formulations and will not be adversely affected by extremely high or low temperatures.

★

West Changes Name

West Disinfecting Co., Long Island City, N. Y., has changed its name to West Chemical Products, Inc., it was announced last month by M. M. Marcuse, board chairman. According to Mr. Marcuse, the West Disinfecting Co. name will be retained in association with the new name for good will purposes. The company, now in its 75th year, manufactures a complete line of industrial maintenance products, including liquid and powdered hand soaps and soap dispensers, floor cleaners, sealers and waxes, insecticides, deodorants and disinfectants.



You're looking in the right direction

Propylene glycol U.S.P.—a glycol with proven high purity—has the excellent properties demanded by industry for pharmaceuticals, dyes, food flavors, and certain perfumes. Propylene glycol also assists in the dispersion of soaps, oils, waxes, and greases in water.

When used in cosmetic and brushless shaving creams, for example, propylene glycol enhances the softening and cleansing action on the skin and is a mild humectant for the cream. In brushless shaving creams, it aids in coupling the oils and lanolin in water.

CARBIDE also produces an industrial grade of propylene glycol that is widely used as a component of polyester resins, a coupler in hydraulic brake fluids, and as a coolant in refrigeration systems.

Carbide and Carbon Chemicals Company, producer of propylene glycol since 1931, produces thirteen other diols and triols:

- *Ethylene glycol*
- *Diethylene glycol*
- *Triethylene glycol*
- *Dipropylene glycol*
- CARBOSEAL *Anti-leak*
- KROMFAX *Solvent (Thiodiglycol)*
- *2-Ethyl-2-Butyl Propanediol-1,3*
- *2,2-Diethyl Propanediol-1,3*
- *Hexylene Glycol*
- *3-Methyl Pentanediol-1,5*
- *Hexanetriol-1,2,6*
- *2-Ethylhexanediol-1,3*
- *Pentanediol-1,5*

For further information on propylene glycol or any CARBIDE chemical, write for your copy of "Physical Properties of Synthetic Organic Chemicals" (F-6136) or the "Glycols" booklet (F-4763). Offices in principal cities—in Canada: Carbide Chemicals Company, Division of Union Carbide Canada Limited, Montreal and Toronto.

CARBIDE AND CARBON CHEMICALS

Carbide and Carbon Chemicals Company
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.

The terms "Kromfax" and "Carboseal" are registered trade-marks of Union Carbide and Carbon Corporation.

New Seaquist Unit

Seaquist Manufacturing Corp., Cary, Ill., recently announced an 8,000 square foot addition to its manufacturing facilities in that city. The new plant mainly will be utilized for production of the firm's 750-NN aerosol valve, according to the announcement. The new building includes the latest equipment for manufacture of aerosol valves, a new research laboratory and general offices, all of which are air-conditioned. The unit also houses the tool room of Werner Die & Stamping Co., makers of automatic assembly machines and molds for use in valve production.

★

Clorox Sale Planned

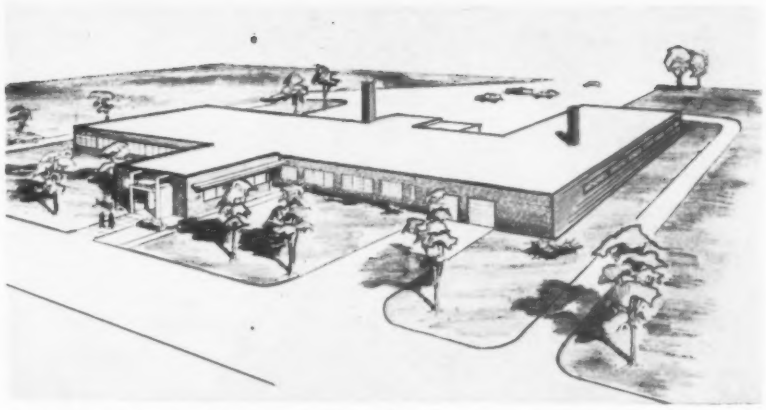
An agreement for purchase by Procter & Gamble Co., Cincinnati, of Clorox Chemical Co., Oakland, Calif., manufacturers of household bleaches and disinfectants, was consummated last month in Oakland. Clorox' directors have ratified the agreement, which is subject to similar approval by the P&G board and Clorox' stockholders at a meeting to be held at a later date.

W. J. Roth, president of Clorox, said the agreement was subject to the working out of certain details. It calls for an exchange of 8½ share of P&G common stock for each ten shares of Clorox stock. There were 723,444 shares of the latter outstanding last Dec. 31. According to P&G plans, a wholly-owned subsidiary would be established to operate the Clorox business, retaining the present personnel and distribution organization.

★

Dedicate Buettner Building

The William O. Buettner Memorial Building, new headquarters of the National Pest Control Association, was dedicated May 9 at Elizabeth, N. J. That day is the birthday of the late executive secretary of the NPCA, who died in September, 1953. The building is located at 250 West Jersey St. The ceremony consisted of the dedication program, a house warming and a hospitality hour at which the New York and New Jersey Pest Control Associations served as hosts. The affair was attended by many notables in the pest control industry.



New plant of Seaquist Manufacturing Corp., Cary, Ill., for production of aerosol valves.

★

Sun Chemical to Relocate

Plans to move all administrative and executive activities of Sun Chemical Corp. to New York from Long Island City, N. Y., were announced recently. The company has signed a lease to occupy approximately 42,000 square feet in a new 34 story building now under construction at 750 Third Ave. between 46th and 47th streets. Occupancy is scheduled for early next year.

★

"Jet Bon Ami" to Canada

Bon Ami Co., New York, recently announced an extensive advertising campaign in Ontario, Quebec, Alberta and British Columbia on behalf of its "Jet Spray Bon Ami" all-purpose aerosol cleaner. The product was introduced into Canada early last month. In the course of the introductory campaign, Bon Ami will utilize mainly newspaper and radio advertisements.

Dr. D. H. R. Barton, recipient of this year's Gold Medal — $1,000 Fritzsche Award, presented to him April 9th during the annual meeting of the American Chemical Society held in Miami, Fla., was guest of Fritzsche president John L. Cassullo and other officers and executives of the New York essential oil firm at a private dinner given in his honor in the Laurent Restaurant shortly after his arrival in New York from the University of Glasgow, Scotland. Those participating were (reading from front, clockwise) Gustave A. Wohlfort, treasurer, M. J. "Pete" Niles, special representative for the president, Edward E. Langenau, director of analytical laboratories, Dr. Ernest Guenther, vice-president and technical director, Dr. Barton, Mr. Cassullo, Harold A. Janovsky, chief flavor chemist, Fred W. Richter, Clifton factory manager, Fred H. Leonhardt, vice-president, R. W. Wilmer, advertising manager, Ellis Merkl, assistant treasurer, H. P. Wesemann, vice-president in charge of sales, Dr. E. H. Hamann, flavor research consultant, and A. J. Hemminger, assistant secretary and director of personnel.

QUALITY...

BASED ON PERFECTION

During the 38 years that Ivers-Lee has been rendering service we have never compromised with perfection.

We have always refused to package any product that we did not think could be properly distributed in our packages. We have always made available packaging materials to our customers so that they could select the material best suited to their product. We have consistently adhered to the policy that every Ivers-Lee Unit-Package must be the finest that can be produced.

Here you have one more reason why Ivers-Lee numbers among its customers the world's leading ethical manufacturers.

IVERS UNIT PACKAGING LEE CO.

215 CENTRAL AVENUE NEWARK, NEW JERSEY

Ivers-Lee is the creator and Contract Packager of Super-Sealtite, the Catchcover, the Tab Pak and a thousand and one other unusual packages for sampling and distributing single or multiple doses of tablets, capsules, powders, creams and liquid Dropettes.

A one-story building to house its main office, plant and laboratory is now being built by S. F. Lawrason & Co., London, Ontario, Canada, it was announced recently by Walter J. Evans, president.

New building is part of firm's expansion program for extended production and distribution of its basic and converted chemical products, including fatty acids.

P&G Quarterly Dividend Up

A quarterly dividend of 50 cents per share on its common stock was announced last month by the board of directors of Procter & Gamble Co., Cincinnati. This represents a five cents per share increase over the previous dividend rate established following the June, 1956 stock split. The dividend is payable on May 15 to shareholders of record on Apr. 22.

★

Cowles Grants License

Cowles Chemical Co., Cleveland, has granted a license to Sifrance, Paris, France, to utilize its process for the manufacture of anhydrous sodium meta, sesqui and ortho silicates, it was announced recently. According to R. F. Huntley, Cowles president, the agreement also included permission for Sifrance to use Cowles' trademark, "Drymet."

Sifrance, a jointly owned subsidiary of four French silicate manufacturers, Saint Gobain, Le Silicate, Kuhlmann and Progil, has begun construction of a plant at Nogent L'Artaud for manufacture of these products. Completion is scheduled for the latter part of this year.

★

New Carbide Bulletin

A new, four-page technical bulletin on primary amyl alcohol was issued recently by Carbide and Carbon Chemicals Co., New York. The booklet provides complete information on the physical properties, specifications, applications and shipping of the product. Primary amyl alcohol is utilized mainly as an intermediate in surface-active agents and in corrosion inhibitors. Copies of the bulletin may be obtained from the company, 30 East 42nd St., New York 17.

Diamond Appoints Osborne

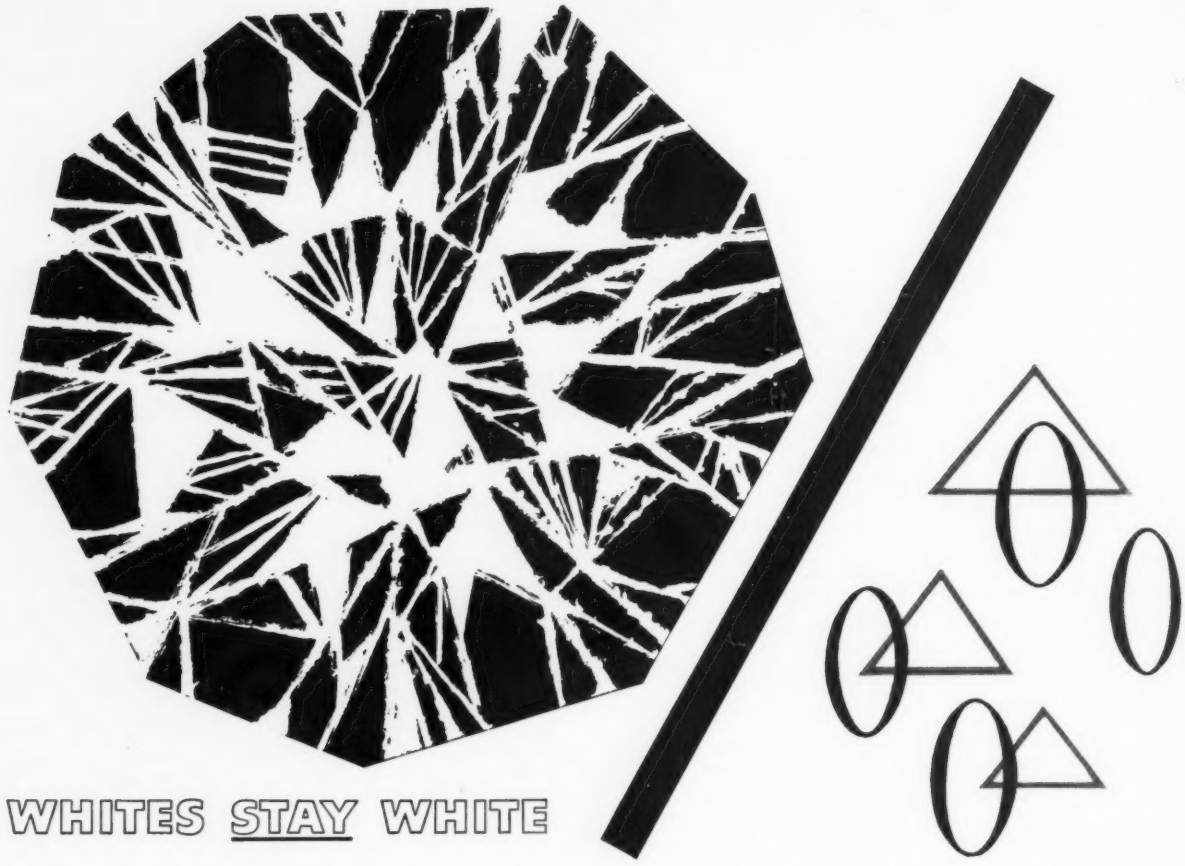
Appointment of Elmer G. Osborne as sales supervisor and acting manager of its Montgomery, Ala. branch office, was announced recently by Diamond Black Leaf Co., Cleveland. Mr. Osborne joined the firm in March, 1955 in a sales capacity and the following October was transferred to Cleveland, becoming a staff assistant. He previously had been a sales representative for Virginia-Carolina Chemical Corp., Richmond, Va.

★

Tamms Offers Slate Flour

Red and gray slate flour, 325 mesh, is once again being offered by Tamms Industries, Inc., Chicago, it was announced last month. The material has been restored to Tamms' line owing to increased demand for slate flour. Consuming industries include abrasive soap and metal polish manufacturers.

PGad B. Morehouse, assistant general counsel for compliance, Federal Trade Commission, addresses Cosmetic Career Women's third annual Men's Day Luncheon. Affair was held last month at Waldorf-Astoria Hotel, New York. Seated on dais are: (left to right) Eve Henriksen, formerly of Richard Hudnut; Peg Burrow, Oxzyn Co.; Bernice Peck, **Mademoiselle;** Kay Fitzpatrick, Toilet Goods Association; Kay Colton, Morningstar-Nicol, Inc.; and Norma Craig, **McCall's.**



WHITES STAY WHITE

Now for the first time a double pressed stearic with Guaranteed Color Stability!

- ☐ Send sample of new Neo-Fat 18-54.
- ☐ Send new pressed stearic folder.
- ☐ Send representative to show proof of 18-54 superiority.

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ARMOUR CHEMICAL DIVISION

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1355 West 31st Street • Chicago 9, Illinois

Armour Chemical guarantees to deliver Neo-Fat® 18-54 with a color stability of 4.0R—3OY maximum on a 5¼" Lovibond scale.*

Never before has any double pressed stearic had such a guarantee. Never before have you had such positive assurance of uniform, superior quality in your finished products. And it's important to note that typical production runs are averaging 2 to 2½R-15Y! Test Neo-Fat 18-54 to prove to yourself this is the finest double pressed stearic available.

COMPARATIVE TESTS PROVE NEO-FAT 18-54 CAN TAKE IT!

INITIAL COLOR—LOV. 5¼"		
Armour	0.3R	2Y
Product V	0.6R	2.5Y
Product W	1.2R	3Y
Product X	0.5R	2Y
Product Y	0.9R	3Y

TENNESSEE-EASTMAN TEST—LOV. 5¼"		
Armour	2R	12Y
Product V	4.5R	18Y
Product W	4.4R	18Y
Product X	4.0R	20Y
Product Y	3.8R	16Y

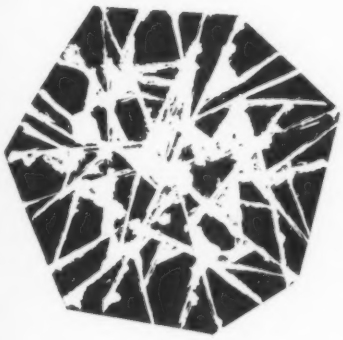
GLYCEROL MONOESTER TEST—LOV. 5¼"		
Armour	0.3R	1Y
Product V	1.4R	5Y
Product W	4.0R	16Y
Product X	1.1R	4Y
Product Y	2.9R	11Y

SULFURIC ACID TEST—GARDNER COLOR	
Armour	1
Product V	2-3
Product W	6-7
Product X	4
Product Y	2-3

SPECIFICATIONS	Min.	Max.
Iodine Value	5	7
Acid Value	208	211
Titer, °C	53.9	54.4
Color, Lovibond (5¼")	—	0.5R-2Y
COLOR STABILITY (5¼")	—	**4.0R-30Y**
Unsaponifiable %		0.5
Moisture %		0.5

**Heat stability test (200°C for 2 hours) for color currently under study by A.O.C.S.— Copy of procedure on request.*

HIGHEST PURITY FATTY ACIDS



Only Armour uses fractional distillation and solvent crystallization to produce a complete line of uniform fatty acids. These Neo-Fat® fatty acids are offered in single components in purities as high as 96%. *Yet you pay no premium in price.* Write us for samples and further information.

SHORT CHAIN SATURATED FATTY ACIDS

Neo-Fat 12 Lauric Acid
14 Myristic Acid
263 Lauric 50—Myristic 50
270 Lauric 70—Myristic 30
273 Lauric 80—Myristic 20
276 Lauric 90—Myristic 10
255 Stripped Coco
265 Distilled Coco

LONG CHAIN SATURATED FATTY ACIDS

Neo-Fat 16 Palmitic Acid
16-54 Eutectic Palmitic-Stearic
18 Stearic Acid
18-61 Stearic-Palmitic Acid
18-53 Single Pressed Stearic
18-54 Double Pressed Stearic
18-55 Triple Pressed Stearic

OLEIC ACIDS

Neo-Fat 94-04 Low Titer Red Oil
94-10 High Titer Red Oil
92-04 Low Titer White Oleic

UNSATURATED FATTY ACIDS

Neo-Fat 47 Distilled Animal Type Acid
55 Distilled Palm Type Acid
65 Distilled Animal Type Acid
95 Distilled Cottonseed Type Acid
105 Distilled Cottonseed Type Acid
110 Distilled Corn Type Acid
122 Distilled Soya Type Acid
127 Distilled Soya Type Acid

ARMOUR

Leader in Progressive Fatty Acid Chemistry

Adell Drops Suit

A fair trade price suit by Adell Chemical Co., Holyoke, Mass., against Shop-Rite Supermarkets, a New Jersey grocery chain, has been settled by mutual agreement, it was announced recently. As part of the settlement, Shop-Rite and its affiliate, Wakefern Food Corp., signed an agreement to observe fair trade prices in the sale of Adell's liquid detergent, "Lestoil." The suit had been filed in U.S. District Court, New Jersey.

—★—

Phillips Alcolac Rep.

Phillips Brothers Chemicals, Inc., New York, has been appointed sales representative in New England for American Alcolac Corp., Baltimore, it was announced recently. Phillips, a distributor of industrial chemicals for more than 40 years, will maintain stocks of Alcolac's complete line of surface active agents in Boston, Providence and Bristol, Conn.

—★—

van Ameringen Expands

van Ameringen-Haebler, Inc., New York, recently began construction of a new administrative building on its 150-acre site at Union Beach, N. J. Completion of the structure is scheduled for about Aug. 1. The building will only accommodate the requirements of the firm's Union Beach operations. Main administrative offices will remain in New York. Constructed of brick, the new building will feature general offices, conference rooms and a modern cafeteria. According to the announcement, the need for expanded administrative quarters was made necessary by the growth of the company's production and research activities at Union Beach. van Ameringen-Haebler recently reported that production has increased three-fold, since the unit began operation in 1952.

—★—

New Residex Catalog

A catalog describing its line of insecticides, herbicides, rodenticides, and equipment for application of these products was published last month by Residex Corp., 1500 West Elizabeth Avenue, Linden, N. J. Instructions for dilution, methods of application, and a guide for selection of the correct chemicals for individual uses are included in the publication. The needs of the professional exterminator receive special attention. Copies are available.

—★—

Olin Appoints King

Appointment of W. Adrian King as general sales manager of the industrial chemicals division of Olin Mathieson Chemical Corp., Baltimore, was announced recently. Mr. King formerly was manager of the automotive products department. He will be succeeded in that post by James C. Laney. Other appointments recently announced by the company include James F. Newell, assistant general manager of the industrial chemicals division; Charles C. Hightower, division production manager; W. Carlton Moseley, Baltimore plant manager; and Cecil L. Williamson, assistant to the division general manager.

Administration building now under construction at Union Beach, N. J., plant of van Ameringen-Haebler, Inc.

For success in creating

Aerosol perfumes and colognes

rely on Givaudan ability

Superior skill, artistry, creative imagination, knowledge of consumer preferences...these are the foundations on which a successful perfume or cologne is built. But...an aerosol fragrance requires even more.

Givaudan offers a complete line of perfume and cologne fragrances which have been specifically prepared to meet the requirements of pressure packaging. Or, we can custom-make a fragrance to meet your specific aerosol needs.

Our staff will welcome the opportunity to discuss your aerosol fragrance requirements.

GIVAUDAN

GIVAUDAN-DELAWANNA, INC.
330 West 42nd Street, New York 36, N. Y.

Diversey Names Bland

Appointment of Harvey E. Bland as technical service manager of Diversey Corp., Chicago, was announced last month. Mr. Bland recently returned from a seven-week assignment with Diversey's South American subsidiary, Consolidadas, S.A., Venezuela, where he supervised a food sanitation program designed to aid food processors in that country. Before joining Diversey, Mr. Bland was associated with North Star Creamery, Fergus Falls, Minn., as plant superintendent and production manager.

Harvey E. Bland

★

Diazinon in Food Plants

"Diazinon" has been accepted by the U.S. Department of Agriculture for fly control in food processing plants, it was announced recently by Geigy Agricultural Chemicals Division of Geigy Chemical Corp., Ardsley, N. Y. "Diazinon 25 E" 25 per cent emulsifiable solution and "Diazinon 25 W" wettable powder have been established for some time for fly control in dairy barns and other buildings. Labeling information for both forms of the product is available from Geigy.

★

Old Empire Names Maucher

Appointment of Hans W. Maucher as vice-president in charge of sales was announced last month by Old Empire, Inc., Newark, N. J., aerosol custom packagers. Mr. Maucher, who is also a member of the firm's board of directors, joined Old Empire in 1953 as sales manager. For ten years prior to that he served with the Naugatuck Aromatics Division of U. S. Rubber Co., New York, where he was a sales representative of aromatic chemicals.

Hans W. Maucher

★

Nat'l Labs' New Promotion

A new departure in its merchandising was announced recently by National Chemical Laboratories of Pennsylvania, Philadelphia private label manufacturer of disinfectants, soaps, and a wide range of allied chemical specialties. Beginning May 1, the firm offers to jobbers a "product of the month" at an especially attractive price while supporting the promotion with full page magazine advertising and direct mail campaigns on a national scope.

Pine oil and pine odor disinfectants, both private label products, are featured in May, according to Al Pollack, president of the firm.

★

Preston H. Fox Retires

Preston H. Fox has retired as vice-president of Tamms Industries, Inc., Chicago, effective May 1, it was announced recently. Mr. Fox joined Tamms in 1921 and for many years headed the firm's raw materials division. Mr. Fox plans to divide his time between assisting his son operate a private business in Hot Springs, Ark. and his Elk Rapids, Mich. home.

Lever Appoints Ginty

Thomas A. Ginty has been appointed chain store sales manager of the Pepsodent division of Lever Brothers Co., New York, it was announced recently by V. T. Finch, sales manager. Mr. Ginty formerly was sales manager of George W. Luft Co., New York. Prior to joining Luft in 1952, Mr. Ginty was a district sales manager for Colgate-Palmolive Co. He previously had been associated with American Home Products Corp., New York, as a salesman.

Thomas A. Ginty

★

CPSEA Elects LaSarre

E. F. LaSarre, managing director of St. Clair Specialty Co., has been elected president of the Chicago Perfumery Soap and Extract Association, Inc., it was announced recently. Other officers installed for 1957 are R. B. Harcombe, Merchants Chemical Co., vice-president; W. A. Martin, Dana Manufacturing Co., secretary; and J. Baldwin, Hazel-Atlas Glass Division of Continental Can Co., treasurer.

Members elected to the board of directors for 1957 include: J. P. Helfrich, Helfrich Laboratories, Inc.; S. Olds, Hoffman-La-Roche, Inc.; L. Haznaw, Florasynth Laboratories, Inc.; L. H. Keepper, Abbott Laboratories, Inc.; K. Hartley, Dodge & Olcott, Inc.; H. Jelly, Walter H. Jelly & Co.; W. A. Frederickson, A. M. Steigerwald Co.; and E. Kuehne, Mallinckrodt Chemical Works, Inc.

TOMORROW'S PRODUCTS TODAY...THROUGH ENJAY PETROCHEMICALS

Basic raw materials for **DETERGENTS** that bring new ease to an old-fashioned job

Today's new detergents bring new ease to an old-fashioned job . . . keeping things clean. Even the grimiest woodwork and fixtures clean faster with these modern products.

If manufacturing detergents is your business, it will pay you to investigate Enjay Tridecyl alcohol, Tripropylene and Tetrapropylene—high-quality petrochemicals that can make a significant contribution in *your* process. These, and other Enjay petrochemicals, have essential roles in the manufacture of many new products for modern living.

With recently expanded laboratory facilities, the Enjay staff of highly trained technicians is ready to help *you* find new ways to new products through Enjay Petrochemicals. Contact the Enjay Company for further information.

Enjay offers a widely diversified line of petrochemicals for industry:

ALCOHOLS & SOLVENTS: Lower Alcohols, Oxo Alcohols, Ketones and Solvents; OIL & FUEL IMPROVERS: Detergent-Inhibitors, V-I Improvers, Oxidation-Inhibitors; CHEMICAL RAW MATERIALS: Olefins, Diolefins, Aromatics; ENJAY BUTYL RUBBER & VISTANEX.

ENJAY

Pioneer in Petrochemicals

ENJAY COMPANY, INC., 15 W. 51st STREET, NEW YORK 19, N.Y. Akron, Boston, Chicago, Los Angeles, New Orleans, Tulsa

Scraps Brake Fluid Spec.

Only heavy duty brake fluids are safe in most 1955, 1956, and 1957 model cars, according to a recent announcement by the Society of Automotive Engineers. S.A.E. approval of moderate duty brake fluids (specification 70-R-2) has therefore been withdrawn.

S.A.E. tests show that a 1957 car, weighing 4,000 pounds stopped repeatedly at high speeds, may generate brake fluid temperatures of 250° or greater. At this temperature brakes with moderate duty fluids having a minimum boiling point of 235° may cause brake failure.

Higher brake fluid temperatures occur more frequently today because of changes in auto design. Although all new cars are delivered with heavy duty brake fluid, a service man may add moderate duty or other fluid to the system. This can lower the boiling point of all the fluid by as much as 80°.

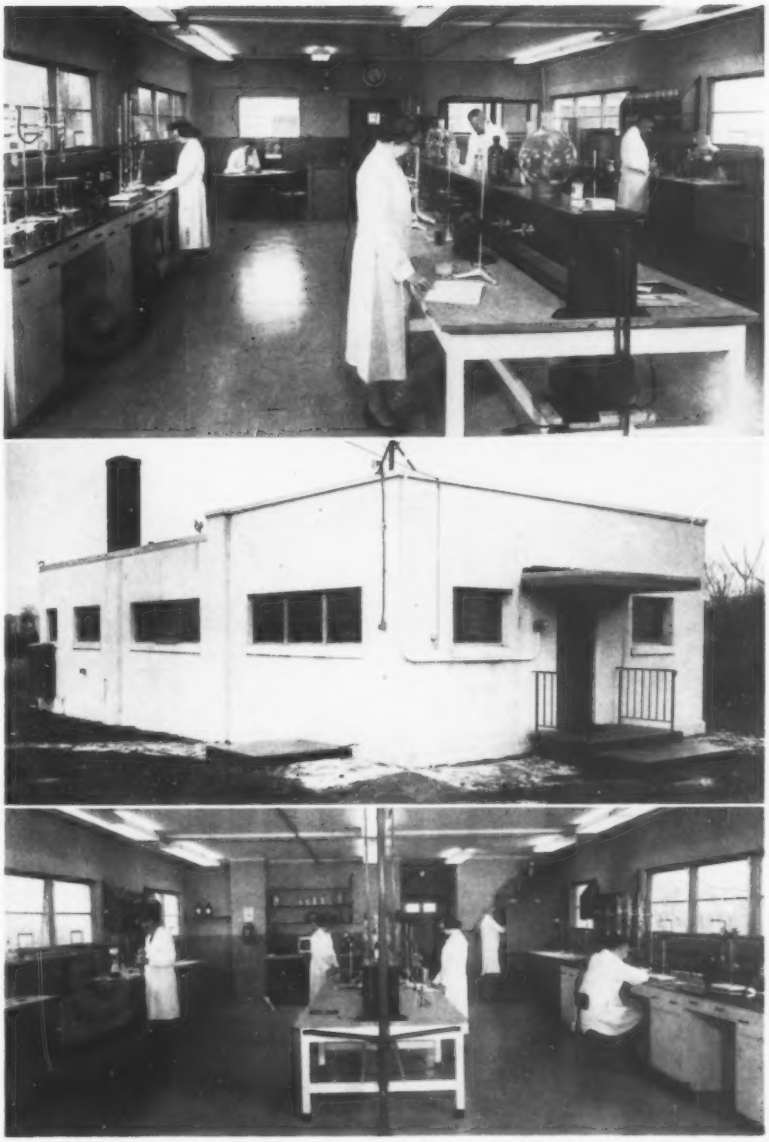
Recognition of the danger of moderate or substandard fluids has led to legislation in eight states forbidding the sale of all fluids that fail to meet S.A.E. 70-R-1 heavy duty specification. Withdrawal of the moderate duty specification may guide other legislatures currently studying brake fluid legislation.

When the heavy duty specifications were first set forth after World War II they were intended largely for use in trucks. Now many trucks are engaged in such heavy hauling, that the society is developing a new specification for truck brake fluids calling for a minimum boiling point above 300°.

★

New Ottawa Product

A new low price phenolic disinfectant was introduced recently by Ottawa Chemical Co., Toledo, O. "Ottafect No. 3," described as liquid isomers of chloroxylenol, is said to combine high potency germicidal and fungicidal action with low price. The new addition to the Ottawa line of chloroxylenols is suggested for use as an additive to or replacement of pine oil, cresylic acid, tar acid oils and other phenolic materials, in applications where its slightly irritating properties do not play a part.



New and larger research and control laboratory of Mac Lac Co., New York importers and manufacturers of shellac. The new laboratory is located adjacent to the company's plant in Rahway, N. J. The building has been furnished with modern equipment. This marks fifth time in the company's history of over 50 years that it has been necessary to expand the laboratory. In addition to production control, a stepped-up program of research into new uses for shellac will be undertaken. Top and bottom photographs in cut show the laboratory looking from opposite ends. The center view is the exterior of the new research and control laboratory, which is operated under the supervision of Henry Blanchford.

★

New D&O Atlanta Office

The Atlanta, Ga. sales office of Dodge & Olcott, Inc., New York, has moved to 45 11th St., N.E., it was announced last month. The branch will be under the direction of Harold Bachman, who was formerly assigned to D&O's St. Louis office.

★

Jessie Colgate Colby Dies

Miss Jessie Colgate Colby, last surviving grandchild of the late William Colgate, founder of the Colgate soap interests in 1806, died Apr. 5 in her home at Colby Lane House, New London, N. H. She was 100 years old. Miss Colby was born and lived as a young woman at the family mansion in

A 72-57

Solves 'skinny' problems

A water-white, liquid saturated fatty alcohol,
Non-irritant, almost odourless,
Easy penetration through the epidermis,
Excellent vehicle for lipoid soluble active ingredients,
Dermatologically approved.
For the preparation of liniments, sun-tan oils,
cosmetic creams, emulsions, lipsticks, hair lotions,
shampoos, toilet soaps, shaving creams, and aftershaves.

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DEUTSCHE HYDRIERWERKE GMBH · GERMANY · DÜSSELDORF

Sole Distributors in USA:
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165 Broadway,
New York 6, N.Y.

Sole Distributors in Canada:
Canerpa Limited
Suite 223, Drummond Building
1117 St. Catherine Street West
Montreal, Que.

Room 709
137 Wellington Street West
Toronto, Ont.

New York, which was constructed by Mr. Colgate in 1831.

★

Calgon Names Two

Luci LaFontaine and Margaret Catanzaro have been appointed regional home economists by Calgon Co., Pittsburgh, it was announced recently. Miss LaFontaine will work out of the firm's San Francisco office, while Miss Catanzaro has been assigned to the Chicago branch. Both women will specialize in services designed to eliminate household cleaning problems caused by water. Miss La Fontaine formerly was home service director for California Electric Supply Co., San Francisco. Miss Catanzaro previously had served with Schillito's Department Store, Cincinnati.

★

Named by Hollingshead

Richard S. Moseley has been named sales manager of the sanitary maintenance division of R. M. Hollingshead Corp., Camden, N. J., it was announced recently. Mr. Moseley joined Hollingshead in February, 1956 as a sales representative in New York. In September of that year he assumed management of the New York sales office and also became field sales manager of the eastern region. Mr. Moseley previously was associated with C. B. Dolge Co., Westport, Conn., manufacturers of sanitary maintenance materials, where he held the post of sales manager.

New R&H Aerosol Brochure

Rohm & Haas Co., Philadelphia, recently announced publication of a new fully-illustrated, paper-bound brochure describing applications of "Lethane," its liquid insecticide concentrate, in household aerosols and pressurized sprays. In addition to information on the product's chemical and physical properties, the eight-page, two-color booklet contains formulation recommendations, specimen labels, and biological performance data.

Designated as form SAN-404, the brochure is available from the company, Washington Square, Philadelphia 5.

★

Dow Sales Increase

Sales of Dow Chemical Co., Midland, Mich., in the nine months ended Feb. 28 rose to $462,257,333 from $410,891,687 in the comparable period a year earlier it was announced recently. Net income, however fell to $38,005,232, equal to share earnings of $1.54. This compares with $42,622,456 and $1.82 in the nine months ended Feb. 28, 1956.

★

Emery Appoints Fieglein

W. N. Fieglein has been appointed southwest sales representative of Emery Industries, Inc., Cincinnati, it was announced last month by G. W. Boyd, fatty acid sales manager. In his new post, Mr. Fieglein will handle the firm's complete line of fatty acids in Texas, Oklahoma, Louisiana, Arkansas, Mississippi, southern Kansas, southwestern Missouri, southwestern Alabama and western Florida. He joined Emery in 1941 in the research department and for the past seven years has been a foreman in the production department.

★

d-Con Moves; Names Moore

d-Con Co., Chicago, manufacturer of rodenticides, has moved its executive and sales offices to 1450 Broadway, New York, national headquarters of Sterling Drug, Inc., it was announced recently by Frank A. Corbet, d-Con president. The Chicago firm was acquired by Sterling late last year.

At the same time, Mr. Corbet announced the appointment of Victor E. Moore as general sales manager of the company. Mr. Moore previously was associated with Simoniz Co., Chicago; S. C. Johnson & Son, Inc., Racine, Wis.; Colgate-Palmolive Co., New York; and Procter & Gamble Co., Cincinnati.

Mr. Corbet also reported the appointment of Earl C. Anderson as regional sales manager in the midwest and southwest districts. His territory will include Illinois, North and South Dakota, Wisconsin, Iowa, Nebraska, Missouri, Kansas, Oklahoma, Arkansas, western Tennessee, Texas and Louisiana. Before joining d-Con, Mr. Anderson was associated with Real Kill, Inc., Kansas City, Mo.

Richard S. Moseley

W. N. Fieglein

Victor E. Moore

The ULTRAWETS wet, penetrate, clean, emulsify.

Inside, outside, all around the building...

here's the handyman to know

It's like having extra help on the cleaning force when you put Atlantic ULTRAWETS to work on factory and institutional clean-up jobs.

ULTRAWET 60L is a superior liquid alkyl aryl sulfonate that works well in hot or cold water, hard or soft water. It increases the efficiency of floor scrubbing, heavy-duty liquids and hard surface cleaners as well as liquid sanitizers... emulsifies grease, speeds soil removal, keeps solids in uniform suspension and leaves no soap scum.

Leading compounders find that ULTRAWET 60L provides uniform high quality and flexibility in the formulation of all-purpose liquid cleaners. In scrub soap formulations it allows the use of a higher phosphate content with resulting clear solutions. Furthermore, it provides excellent controlled pH of alkalinity.

The ULTRAWET product advantages add up to sales advantages for you. Atlantic ULTRAWETS are available in flake, bead and liquid form. For even greater economy, deliveries can be made in bulk shipments.

For more information on our cost-cutting ULTRAWETS, write, call or wire The Atlantic Refining Company at the nearest office listed.

ATLANTIC
PETROLEUM CHEMICALS

Philadelphia, Providence, Charlotte, Chicago

In the West: L. H. Butcher Co.

In Canada: Naugatuck Chemicals Division of Dominion Rubber Company, Ltd.

In Europe: Atlantic Chemicals SAB, Antwerp, Belgium

In South America: Atlantic Refining Company of Brazil, Rio de Janeiro

Brennan to van Ameringen

Joseph I. Brennan has joined the staff of van Ameringen-Haebler, Inc., New York, it was announced

Joseph I. Brennan

recently by Charles P. Walker, president. Mr. Brennan will be responsible for development and coordination of personnel and industrial relations activities in the firm's various plants and branch offices. Mr. Brennan formerly was personnel manager of the surgical products division of American Cyanamid Co., New York. He had also served in the plastics and resin division of that firm.

★

FMC Appoints Reilly

Desmond M. C. Reilly has been named manager of technical information for the organic chemicals division of Food Machinery and Chemical Corp., New York, it was announced recently. He will be responsible for preparation of technical literature on organic chemicals, plastics and plasticizers made by the division, and also for the division's advertising program. Mr. Reilly formerly held a similar position with FMC's Westvaco Mineral Products and Westvaco Chlor-Alkali Divisions.

★

Nippon Perfumer in U.S.

Teikichi Hiraizumi, president of the Takasago Perfumery Co., Ltd., Tokyo, left New York on April 20 en route to Brazil as part of a world trip investigating the perfuming materials industries. Mr. Hiraizumi arrived in New York early in April. Following a visit to Brazil, he went to France and is currently touring the perfume centers of Europe. He will return to Japan about the middle of June. His company in Japan produces camphor oils and derivatives including heliotropine and other aromatic chemicals. While in the United States, Mr. Hiraizumi made his headquarters with the American representatives of his firm, Marubeni-Iida Co. of 39 Broadway, New York.

★

New Hercules Pesticide

A new pesticide designed for use on cotton, fruits, vegetables and some ornamentals, was introduced recently by Hercules Powder Co., Wilmington, Del. Designated "Hercules 528," the new product is claimed to be effective in controlling leafhoppers, thrips, leaf miners and various types of mites. Said to have a lasting residual effect, "528" is now available in both dusts and sprays. One quarter to one half pound of material is said to be sufficient to protect one acre of land. Further information may be obtained from the company, Wilmington 99, Del.

Kelite Elects Zander

William E. Zander has been elected to the board of directors of Kelite Corp., Berkeley Heights,

William E. Zander

N. J., it was announced recently by L. C. Sorensen, president. Mr. Zander is a director of Arrowhead and Puritas Waters, Inc., and formerly was senior vice-president and director of Rheem Manufacturing Co., New York.

★

New RMA Floor Guide

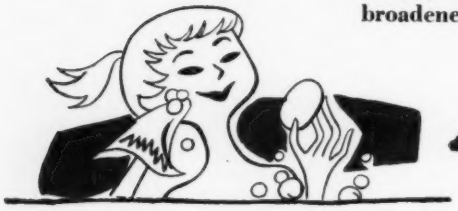
The Rubber Manufacturer's Association recently issued its new list of approved rubber floor cleaners and polishes. Approval is given

This mass display of "Sweetheart" soap in a west coast supermarket sold 65 cases one weekend and 150 cases the following week. Promotion and display was part of "Sweetheart's" one cent sale which featured a contest in which first prize is $37,000 home, fully equipped. Second prize is $10,000 home. Contest, which began March 8 ran eight weeks.

G-11®

(HEXACHLOROPHENE U. S. P.)

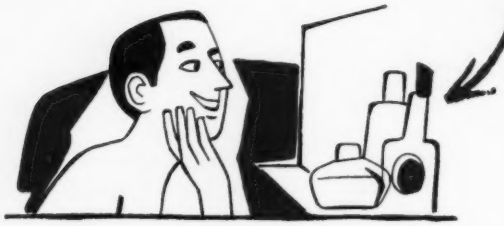
with its unique degerming and antiseptic action, was the key to increased sales and broadened markets *for all these products:*



SOAPS

Waterless Hand Cleaners
Detergents
Shampoos

Deodorant
Antiseptic
Surgical Scrub
Medicated



PHARMACEUTICALS

Antiseptic Ointments
Diaper Rash Preparations
Instrument Sterilization
Bandages
Surgical Dressings
Vaginal Preparations
Antipruritics
Protective Hand Creams
Corn Ointments

COSMETICS

Deodorant Creams
Deodorant Sticks
Deodorant Colognes
Deodorant Powder
Anti-perspirants
Baby Lotions
Baby Powders
Hand Lotions
Face Creams
Shampoos

Acne Lotions
Menthol Lotions and Ointments
Anti-infectives
Surgical Rubber Goods
Lip Pomades
Aerosol Foot Sprays

Perhaps G-11 is exactly what *your* product needs to give it a competitive advantage in your markets. Sindar invites you to phone, wire or write for full information.

Skin Conditioners
Dusting Powders
Hair Dressings
Antiseptic Creams
Aftershave Lotions

SINDAR® *Corporation*
Industrial Aromatics and Chemicals
330 West 42nd Street, New York 36, New York

to all products meeting RMA minimum standards, according to the announcement. Polishes are tested for water resistance, cold water solubility and ease of removing. Cleaners are tested for discoloration or other harmful effects on rubber. Copies of the guide may be obtained from the association, 444 Madison Ave., New York.

—★—

New Surface Active Agents

Three multi-purpose anionic surface active agents, based on alkylaryl sulfonates, were introduced recently by Tennessee Corp., 805 Peachtree Building, Atlanta, Ga. Tradenamed "Sul-Fon-Ate X-35-L," "X-50-L" and "X-60-LT," the new products are expected to find use as low cloud point detergents and wetting agents in the detergent and allied industries.

At the same time, it was also announced that Tennessee Corp. will move on June 1 to a new location at 1330 West Peachtree St., Suite 500, Atlanta 9. Samples and descriptive literature on these new surface active agents may be obtained from firm's new address.

—★—

Drew Observes 50th Year

E. F. Drew & Co., Boonton, N. J., last month celebrated its 50th anniversary with a luncheon at the Knoll Club in Boonton Manor, N. J., for some 100 guests. The "Fifty Years of Progress" observance also included a two-day open house, at which the guests, Drew employees and the general public were invited to tour the plant.

The company, a leading producer of vegetable oil and fatty acid specialty products, including soaps, detergents, bleach powders, water conditioners and wetting agents, was founded in 1907 in East Boston. It moved to Boonton in 1917, and today is represented by plants at Ajax, Ontario and Sao Paulo, Brazil, branch offices in Boston, Philadelphia and Chicago, and more than 50 warehouses located in principal cities of the United States and seven foreign countries.

D. A. Coape Arnold, executive vice-president, told the luncheon guests that he expects the plant to quadruple its output within ten years. Other speakers included Joseph E. McLean, State Commissioner of Conservation and Economic Development; State Senator Thomas J. Hillery; and State Assemblyman, Elder Mills.

New "Silicote" liquid spray skin protective, a companion product to "Silicote" ointment, now comes in a three-ounce aerosol package. A product of Arnar-Stone Laboratories, Inc., Mount Prospect, Ill., the spray is used to protect skin against contact irritants, and to promote healing of chapped, irritated, or macerated skin due to external irritants. The aerosol spray is described as containing 33 1/3 per cent silicone (dimethicone) in a specially prepared petrolatum base. High silicone content is said to provide protection.

Aerial view of the Drew plant in Boonton, where the 50th anniversary ceremonies were held last month.

—★—

Broening in New Post

J. J. Broening has been named head of the industrial service testing division of American Bio-Chemical Laboratory, Baltimore, it was announced recently by Dr. S. L. Goldheim, director. In his new post, Mr. Broening will be responsible for expanding the laboratory's insecticide testing program.

—★—

Plan 42nd Hotel Show

Preliminary plans for the 42nd annual National Hotel Exposition were discussed at a recent meeting of the show's executive committee held in the Hotel Association Building in New York. The exposition will be held at the New York Coliseum, Nov. 11-15.

K. W. Seeley, general manager of the show, reported that many contracts for exhibit space at the 1957 exposition had already been renewd, and many exhibitors had requested additional space. Also discussed was the possibility of renting the fourth floor of the Coliseum to provide additional display space. Final decision, however, was deferred until the committee's next meeting.

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Lasthuysen Joins Rhodia

Appointment of Willem Lasthuysen as technical director of the aromatics division of Rhodia,

Willem Lasthuysen

Inc., New York, was announced recently by Raymond J. Picard, president. For the past six months, Mr. Lasthuysen was senior perfumer of Colgate-Palmolive Co., New York. Prior to that he served as chief chemist of Dodge & Olcott, Inc., New York.

Before joining D&O, Mr. Lasthuysen was associated with the manufacturing operations of the A&P chain, where he was engaged in the development of flavors and perfumes for household and other specialties.

In 1945, Mr. Lasthuysen founded the South American affiliate of Chemische Fabriek Naarden, one of the foremost European essential oil and aromatic houses. He had formerly served as a research chemist in Naarden's home factory in Holland. A graduate of the Universities of Utrecht, Holland, and Bonn, Germany, he has published numerous contributions in the flavors and aromatics field.

★

Glidden Names Rus Schay

Appointment of S. Rus Schay as aromatics chemist of the southern chemical division of Glidden Co., Cleveland, was announced recently by Dr. W. David Stallcup, division vice-president. In his new post, Mr. Rus Schay will be responsible for development, production and sales of anetheole, terpineol, cineole, caryophyllene and other terpene fine chemicals. Prior to joining Glidden, he had been plant and production manager for Polak's Frutal Works, Inc., Middletown, N.Y. He previously had been associated with S. B. Penick & Co., New York.

★

Emery Appoints Four

Joseph P. Clancy has been appointed eastern district sales manager of the organic sales department of Emery Industries, Inc., Cincinnati, it was announced recently by R. F. Brown, sales manager. Mr. Clancy, who will headquarter at Emery's Philadelphia office, succeeds J. W. Ritz, who has been named assistant sales manager. Mr. Clancy joined the company in 1949 as a sales representative in the southern district. He was appointed chemical sales representative in New England in 1955.

At the same time, Mr. Brown also announced the appointments of Joseph E. Quinty to the Chicago office, William C. Sowers to the New York office, and Arthur R. McDermott, as successor to Mr. Clancy as New England representative. Mr. Quinty joined Emery in 1953 and since that time has been a representative in New York and New Jersey. Mr. Sowers, who also joined the company in 1953, has served as representative in Cleveland, Chicago and Detroit. Mr. McDermott has been active in sales and development work since joining the firm in 1956.

Joseph P. Clancy

UBS Elects Glynn

Election of Charles V. Glynn as treasurer of UBS Chemical Corp., Cambridge, Mass., succeeding Fred-

Charles V. Glynn

erick B. Day, was announced recently by the board of directors. Mr. Day will continue with the company as a director, member of the finance committee and consultant. Mr. Glynn joined UBS in 1956 as assistant treasurer and controller. He previously had practiced as a public accountant in Massachusetts and Rhode Island.

★

Geigy Weed Killer

The availability of an industrial weed killer designed to control grassy and broadleaf weeds, was announced recently by Geigy Agricultural Chemicals, a division of Geigy Chemical Corp., Ardsley, N. Y. Tradenamed "Simazin 50 W," the new product is applied at the rate of 10 pounds per acre prior to weed emergence. When so applied, the product is claimed to prevent for one year growth of most grassy and broadleaf weeds. It is said to be relatively non-toxic, non-corrosive and can be removed from spray equipment by washing thoroughly with water. A wettable powder containing 50 per cent active ingredient, "Simazin 50 W" has been sold in Europe as a general herbicide for the past two years. Complete literature about the product may be obtained from the company, P.O. Box 430, Yonkers, N. Y.

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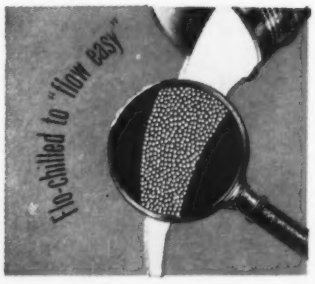

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Russell Appoints Kripp

Apointment of Russell G. Kripp as vice-president of the chemical division of Russell Supply Co.,

Russell G. Kripp

Bridgeville, Pa., was announced recently by Niles E. Russell, president. Mr. Kripp formerly was vice-president of Russell Chemical Co., prior to its acquisition by Russell Supply Co.

★

Joins van Ameringen

Appointment of William N. Henderson to the staff of van Ameringen-Haebler, Inc., New York, was announced recently by Charles P. Walker, president. In his new post, Dr. Henderson will be responsible for coordination of research and development projects. He formerly was associated with Allied Chemical & Dye Corp., New York, where his work included development of improved processes for manufacture of phenol and soda ash.

William N. Henderson

Buckley Joins Getz

M. S. Buckley has joined Getz Exterminators, Inc., St. Louis, as technical director and division

M. S. Buckley

manager, it was announced recently by Herman L. Fellton, president. Mr. Buckley, who has been associated with pest control and industrial sanitation for the past 15 years, previously had served in technical and supervisory capacities with Dow Chemical Co., Midland, Mich., General Mills, Inc., Minneapolis, and the Kansas State Grain Inspection Department.

★

Brooks Names Buck

Donald A. Buck has been appointed director of research for Winfield Brooks Co., Woburn, Mass., it was announced last month by Kenneth E. Perry, president. Mr. Brooks formerly was associated with B. B. Chemical Co., Cambridge, Mass., where he was ex-

Donald A. Buck

The man who needed a specialist!

With a throbbing head and uneasy stomach, the P.A. stopped for succor at the plant dispensary. Grumbled to the doc about his problems until he was told, "You need a specialist!"

The P.A. almost strangled on the aspirins he was swallowing. But the doc went on to explain that he didn't mean another M.D., but a company that specialized in tall oil products . . . one that could eliminate the P.A.'s frustrations in trying to get good service.

It turned out that we were the prescription, for the P.A. found that Arizona supplies tall oil derivatives *exclusively*. Months later, he stopped in at the dispensary again . . . but just to tell the doc that it was the best "diagnosis" he'd ever had!

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gaged in research and development work. Winfield Brooks manufactures industrial specialty products and operates one of the leading research and product development laboratories in New England.

—★—

Am. Dispenser Named Rep.

American Dispenser Co., New York, has been appointed sales representative of Midland Industries, Inc., Montclair, N. J., it was announced last month by Burton L. Feinson, American general manager. Midland produces metal specialties for use primarily by manufacturers of sanitary maintenance materials and equipment.

—★—

Nopco Names Weierich

Nopco Chemical Co., Harrison, N. J., recently announced the appointment of Edward G. Weierich as manager of its specialties division. In his new post, Mr. Weierich will be responsible for sales and promotion of the firm's line of synthetic detergents, emulsifiers, dispersants and related specialties.

Edward G. Weierich

At the same time, the company announced appointment of Albert W. Silvain as manager of the protective coatings division. Mr. Silvain will be in charge of development and sales of Nopco's complete line of processing chemicals.

—★—

Dave Ginsburg Dies

David L. Ginsburg, 58, secretary-treasurer of Scientific Supply Co., Denver sanitary supply house, died April 27 at General Rose Hospital in Denver following a heart attack several days earlier. Funeral services were held April 30 at the Feldman Mortuary and burial took place at Fairmount Cemetery.

Mr. Ginsburg served as president of the National Sanitary Supply Association during 1953-54. He was a graduate of the University of Denver and a member of the Denver Chamber of Commerce, Denver Press Club, Paint Club, Chemical Club, B'nai B'rith and the Leyden-Chiles-Wickersham Post 1, American Legion.

A native of Philadelphia, Mr. Ginsburg came to Denver in 1906 as a child. In addition to being secretary-treasurer of Scientific Supply, Mr. Ginsburg was vice-president of Kawl Paint Co., Denver.

Survivors include his wife, Mrs. Jeanette Conner Ginsburg; three brothers and two sisters.

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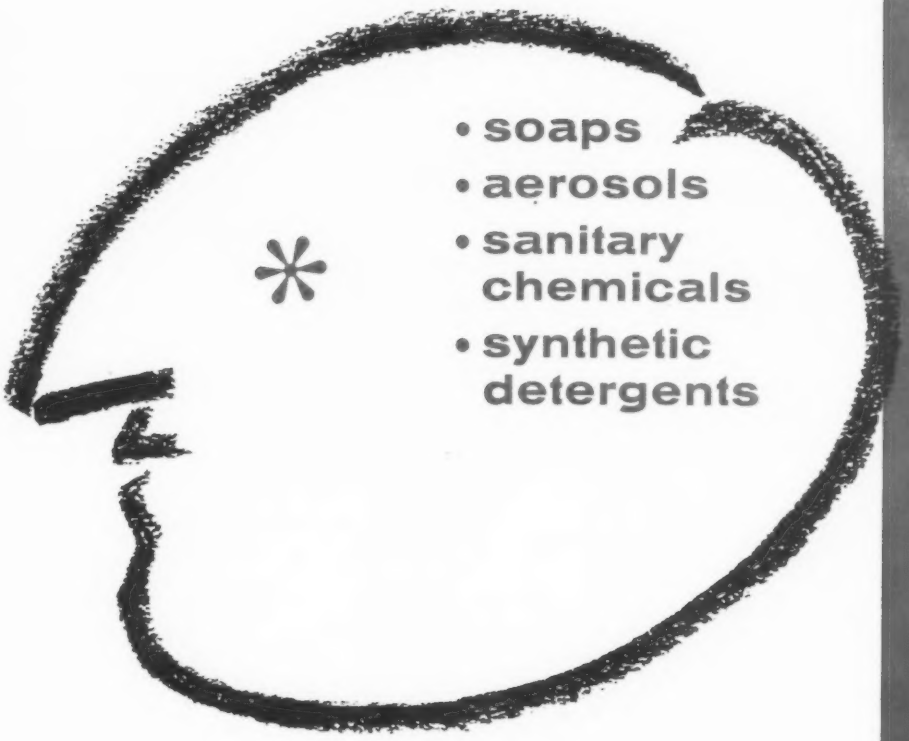

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Starch Volume Higher

Consumer sales of laundry starch have reached $60,000,000 a year, according to Max Potash, president of Polyvinyl Chemicals, Inc., Peabody, Mass. In an article in the March issue of *Chemical Progress,* company publication of Carbide and Carbon Chemicals Co., New York, Mr. Potash stated that plastic starches account for 15 per cent of the annual volume in the home laundry starch market. He also predicted that the growth rate for plastic starches may be over 50 per cent annually for the next few years.

It was also reported in the article that Polyvinyl Chemicals recently developed a plastic starch, based on "Neo Vac" resins, that is claimed to remain effective through eight to 15 launderings. Carbide's vinyl acetate is the principal raw material used to make "Neo Vac" resins for this application.

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Pennsalt Name Change

Shareholders of Pennsylvania Salt Manufacturing Co., Philadelphia, have approved a change in the company name to Pennsalt Chemical Corp., it was announced last month at a meeting in that city. According to William P. Drake, president, the company showed a net profit of $1,035,000, equal to share earnings of 81 cents, in the first quarter of 1957. This compares with $895,200 and 72 cents per share in the first three months of 1956. Sales were up 10 per cent in the first quarter of this year to $19,111,000, as against $17,256,000 in the corresponding quarter a year ago.

—★—

Varin in New Post

Appointment of Roger E. Varin as director of international operations for Lehn & Fink Products Corp., New York, was announced recently by Edward Plaut, president. In his new post, Mr. Varin will be in charge of all Lehn & Fink foreign business, including the company's subsidiaries in Buenos Aires, Rio de Janeiro, Toronto, London, Paris and Hamburg, and distributorships in 28 countries. Mr. Varin formerly was assistant to the director of international operations at Kenyon & Eckhardt, Inc., New York advertising agency. Prior to that he held executive positions with Pfizer International, Hoffmann-La Roche, Inc. and Coty, Inc., all of New York.

Roger E. Varin

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Witco Moves Sales Office

Witco Chemical Co., Chicago, recently moved its mid-western regional sales headquarters to new and larger offices in the same building, the Lincoln Tower Building at 75 East Wacker Drive. Also moving into the new quarters was the sales department of Emulsol Chemical Division. Emulsol formerly was located at 59 East Madison St. According to J. S. Harrison, mid-western sales vice-president, the new offices cover an entire floor of the building and contain 4,500 square feet of floor space.

—★—

Polyvinyl Price Cut

Polyvinyl Chemicals, Inc., Peabody, Mass., recently announced a price reduction of 1½ cents per pound on its "Neocryl A234-U," resin, which is designed for use in the manufacture of floor wax finishes. According to Max Potash, president, the new price of 25½ cents per pound applies only to truckload drum shipments.

Crown Sales Increase

Net sales of Crown Cork and Seal Co., Baltimore, in the first quarter of 1957 increased to $27,856,673 from $27,367,616 in the corresponding quarter a year earlier. In the first 1957 quarter, the company reported a net loss of $445,470. This compared to a net income of $54,431 in the similar three months in 1956.

—★—

Rohm & Haas Sales Up

Rohm & Haas Co., Philadelphia, recently reported an increase in sales and a decline in income and earnings for the first quarter of 1957. Net sales in the three months ended Mar. 31 totaled $43,935,000, as compared with $40,436,000 in the similar 1956 period. Net income in the first quarter of 1957 amounted to $4,102,000, equal to share earnings of $3.88, as compared with $4,216,000 and $3.99 in the corresponding period a year earlier.

—★—

Cowles Elects Woonton

Norman E. Woonton has been elected to the newly-created post of vice-president of manufacturing of Cowles Chemical Co., Cleveland, it was announced recently by the board of directors. In his new assignment, Mr. Woonton will be responsible for manufacturing operations at Cowles' plants in Skaneateles Falls, N. Y., Lockport, N. Y., and Sewaren, N. J. He formerly was manager of the Skaneateles Falls unit.

Norman E. Woonton

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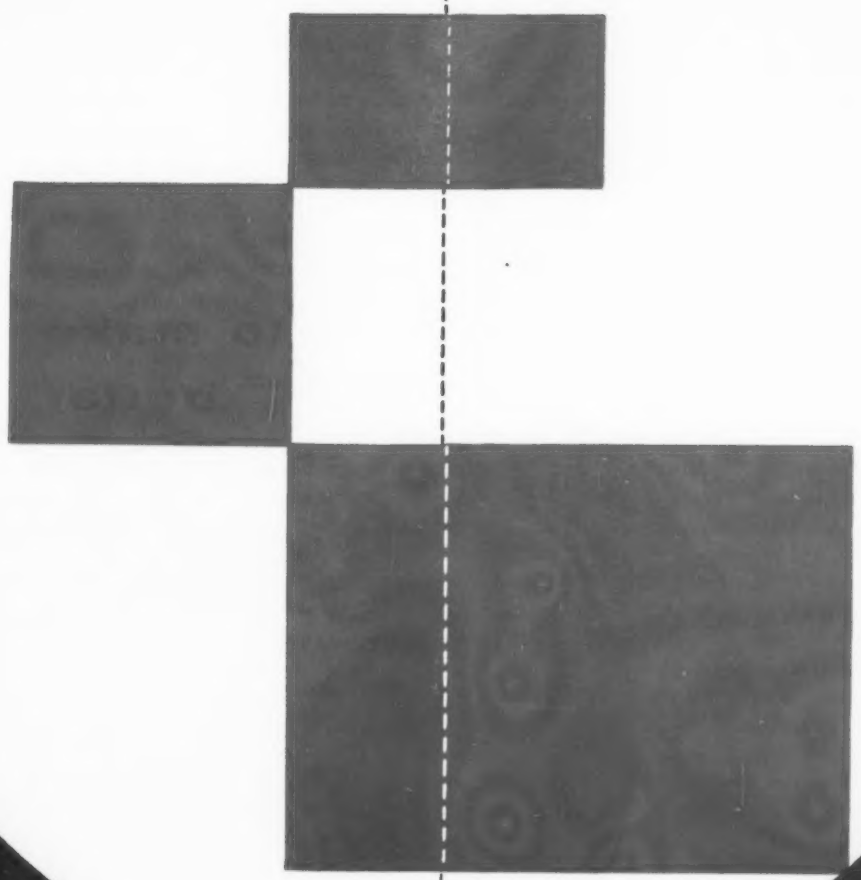

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Chlordane Display Contest Is Now Under Way

A CHLORDANE display contest, which got underway May 1 and runs through June 30, is attracting nation-wide attention, according to a recent announcement by Velsicol Chemical Corp., Chicago. Velsicol, producer of chlordane and sponsor of the $10,000 "Show and Sell" contest, said formulators' salesmen in particular are showing much interest in the dealer promotion. These salesmen receive a cash bonus of $2.00 for every chlordane display they help set up whether or not it wins. Additional cash awards go to salesmen if their dealers' displays win prizes.

First prize in the contest is an all-expense paid trip for two to Paris for one week. In addition to the grand prize, which will be awarded to the dealer whose display is judged best in his particular region and in competition with winning displays in five other regions of the U. S., six regional first prizes, amounting to $500 in cash each will be awarded. Second, third, fourth and fifth regional prizes are $250, $125, $75 and $50 in cash. National prizes include, in addition to the trip to Paris, a week in Hawaii, a 14-day Caribbean cruise, six days in Mexico and six days at Banff and Lake Louise.

The contest involves setting up a store or window display featuring chlordane and using at least five cases of insecticides that contain chlordane. The display must be kept up for at least two weeks between May 1 and June 30. To participate in the judging the display must be photographed and the picture submitted to Velsicol.

Any bonafide retailer or sales personnel of such business in the U.S. who sells products for lawn and garden use is eligible. Entries are judged for originality, attention value and merchandising effectiveness.

Contest brochures have been mailed by Velsicol to over 30,000 leading garden supply dealers throughout the U.S. The brochure is also available to formulators and distributors.

Elaborate kits are being mailed to each dealer entering the contest. Kits contain several new promotion pieces. Featured is a large display centerpiece six feet wide and two feet high. The kit also contains an entry blank and a complete supply of chlordane window streamers, consumer folds and a chlordane mobile display unit.

★

German Soap Sales Up

Western Germany reports a 1.3 per cent increase in the 1956 production and sales of all types of soaps with a total of 107,400 tons against 106,800 tons in 1955. Attributed to the Suez crisis and good Christmas trade, soap business rose 13 per cent in November and 30 per cent in December 1956. Up to and including September 1956, sales had lagged almost three per cent behind the corresponding period in 1955. It is possible, of course, that this buying wave at the year's end may exert an adverse influence on purchases in the first quarter of 1957.

Combined total production of soaps and detergents has dropped to 411,000 tons from 423,500 tons in 1955. This decrease is largely due to the shrinking production of laundering auxiliaries, which has fallen off 15 per cent to 94,300 tons, a figure included in the above total. Light duty detergents have grown 10 per cent to 26,900 tons, which may at least in part explain the reduced use of auxiliary compounds. Other laundry compounds for washing white fabrics, heavy duty use, and laundering colored fabrics increased only 300 tons over last year to 181,400 tons. The combined figure does not include hand cleansers and scouring powders, production of which increased to 54,000 tons.

Apart from the late spurt reported above, the following trends were reported in the various branches of soap manufacture during the first nine months of 1956: household bars and soft soap dropped 10 per cent to 22,700 tons and 11,300 tons, respectively. Toilet soap maintained a slight upward trend throughout, with the first nine months' output at 30,400 tons, about four per cent above the corresponding period in 1955.

Shaving soap has dropped 5.5 per cent and shave cream has gained 5.6 per cent. Output of liquid soap has increased almost by half to 2,500 tons and shampoo by a third to 440 tons. The growth of these last two groups is partly caused by the growing popularity of packaged shampoos, especially capsules in the shape of plastic "pillows." Press-Informationsstelle des Verbandes der Chemischen Industrie, Karlstr. 21, Frankfurt a.M., Germany.

★

Named to Industrial Group

Gordon H. Feinberg, a partner in Sanitary Supply Co., La Crosse, Wisc., recently was appointed by Gov. Vernon Thomson to serve on a state-wide industrial development planning committee. Mr. Feinberg is presently chairman of the La Crosse County industrial development committee.

Antimicrobials

(*From Page* 101)

ticipated from such treatments can be enlarged, this vision may well turn out to be a mirage leading to many disappointments.

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New Federal Floor Coating

A new floor coating designed for use on asphalt, rubber, vinyl, cork, linoleum, terrazzo, wood or concrete surfaces, was developed recently by Federal Varnish Division of Enterprise Paint Mfg. Co., Chicago.

Tradenamed "Rezem," the floor product is said to be slip and scuff resistant. It is also claimed to provide protection against dirt and water spotting. "Rezem" is available in one and five gallon cans and 30 and 50 gallon drums. Maximum coverage is 2,000 square feet per gallon. Complete information may be obtained from the company, 2841 South Ashland Ave., Chicago 8.

—★—

O'Brien Arizona Rep.

Bart F. O'Brien has been named sales representative of Arizona Chemical Co., New York, it was announced recently. Mr. O'Brien's territory will include the New England states and parts of New York and New Jersey. For the past eight months, Mr. O'Brien has been under-going training at the firm's headquarters in Panama City, Fla. and New York. Prior to joining Arizona, he was associated with American Can Co., New York.

New Patents

(*From Page* 191)

aromatic and aromatic-aliphatic hydrocarbon and hydroxy substituted hydrocarbon groups of 1–12 carbon atoms, (n′) aliphatic, aromatic and aromatic-aliphatic ether groups, each having at least one ether oxygen linkage therein and otherwise being hydrocarbon of 2–12 carbon atoms; (o) aliphatic, aromatic and aromatic-aliphatic ether groups, each having at least one ether oxygen linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–12 carbon atoms, (p) aliphatic, aromatic and aromatic-aliphatic groups having a CONH linkage therein and otherwise being hydrocarbon of 2–12 carbon atoms, (q) aliphatic, aromatic and aromatic-aliphatic groups, each of said groups having a keto carbonyl linkage therein and otherwise being hydrocarbon of 2–12 carbon atoms, (r) aliphatic, aromatic and aromatic-aliphatic groups, each of said groups having a keto carbonyl linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–12 carbon atoms, (s) aliphatic, aromatic and aromatic-aliphatic groups each of said groups including a CONH linkage therein and otherwise being hydroxy substituted hydrocarbon of 2–12 carbon atoms; X is selected from the group consisting of SO_2 and OSO_2 and M is an alkali metal.

No. 2,783,919. Fluid Dispenser, patented by Julian Ansell, Boston, assignor to S. H. Ansell & Sons, Boston. The patent describes a combination of a flexible receptacle having an externally threaded mouth portion; a closure for said mouth portion comprising, in integral assembly, a cylindrical body portion internally threaded for threadwise engagement with said mouth portion, an inwardly directed annular flange at the upper edge of said body portion, a cylindrical extension of reduced diameter coaxial with said body portion and connected at its lower end to the inner peripheral edge of said flange, a second narrower inwardly directed annular flange at the upper edge of said extension, and a tubular portion of much reduced diameter coaxial with said body portion and extension, said tubular portion extending from the inner peripheral edge of said second-mentioned flange downwardly in the direction of said body portion but terminating short thereof; and a flexible dispensing tube penetrating said closure by way of the bore of said tubular portion and communicating between the interior of the receptacle and the atmosphere, said tube extending from adjacent the receptacle bottom to substantially beyond said closure and being embraced in air-tight relationship by said tubular closure portion over a short portion intermediate its length.

No. 785,838. Aerosol Dispenser, patented by Carl H. Mayer Jr., Wilmette, Ill., assignor to Safe Inc., Marinette, Wis. Covered is a valve assembly for a pressurized vessel comprising a dip-tube having its lower end within said vessel, a push wire of substantially smaller diameter than said tube slidable within said dip-tube, and a valve plug attached to one end of said wire seatable on the lower end of said tube, at least one of said wire and said tube being curved and at least one of said wire and said tube being resilient to laterally displace the plug when it has been axially unseated, said plug having an obstructing portion engageable with the lower end of the dip-tube to prevent reseating.

No. 2,784,875. Liquid Dispenser, patented by John E. Brink, Grosse Pointe, Mich. Revealed is a fluid dispenser comprising a large container, a small container positioned in said large container, large container closure means integral with said small container removably closing said large container below the top of said large container, first means carried by said large container closure means for receiving liquid from said large container, second means carried by said large container closure means for receiving liquid from said small container, third means carried by said large container closure means for receiving liquid from said first and said second means, and means separating said third means from said first and second means such that liquid does not pass from said third means to said first and second means when said dispenser is in a vertical position, outlet means carried by said third means, metering means closing the top of said first, second and third means for regulating the flow of liquid into said second means, said metering means consisting of an upper surface portion in contact with the top surface of said first, second and third means, having a depending flange in contact with the inner surface of the upper end wall of said small container, said flange having an elongated slot therein in overlying relationship with the means communicating said second compartment and said small container, said slot increasing in width from one end toward the other and being divided into two parts, the said two parts being spaced from each other.

No. 2,785,768. Apparatus for Producing Liquid Suspensions for Use as Aerosols, patented by Fernand Gauchard, Santeny, France. This patent discloses in an apparatus for producing fine suspensions of liquid for use as aerosols for medicinal purposes, a chamber having means for subdividing droplets of an atomized liquid in suspension in a stream of gasiform fluid passing through said chamber, the said means consisting of stationary blades of dielectric material placed across the path of said stream, the said blades having sharp edges directed toward the oncoming stream and positioned for impingement of said droplets thereagainst and for providing an aerosol by segmentation of said droplets.

No. 2,784,878. Pressurized Paste Dispensers, patented by Ignatius E. Theodorou, Haverhill, Mass. A dispenser is covered comprising walls defining a fluid pressure chamber and a chamber for holding a supply of material in a fluid state, means defining an outlet in a wall portion of said material-holding chamber, valve means operable to open a passage for flow of fluid under pressure from said fluid pressure chamber into material-ejecting relation to the material in said material-holding chamber, resilient means constantly biasing said valve means to a position in which it closes said flow passage, manually operable means connected to said valve means for actuating said valve means in opposition to its said bias thereby to open said flow passage, and means for venting said material-holding chamber to atmosphere in response to each movement of said valve means to its position closing said flow passage.

No. 2,786,796. Method of Repelling Flies with Dibutylphenyl Monoether Polyglycols, patented by Vivian H. Melass, Lake Jackson, Tex., assignor to Dow Chemical Co., Midland, Mich. This patent teaches a method for repelling flies which comprises applying to the surface to be protected a dibutylphenyl monoether of a polyglycol, said polyglycol containing 8 to 10 oxyalkylene units and at least 3 of said units being oxypropylene units.

No. 2,786,010. Preserving Textiles and Leather, patented by Alton T. White, Danvers, Mass. The patent covers a fungicidal impregnant comprising as the essential active ingredient 0.1% to 10% by weight of tetrachloro hydroquinone and as a solvent therefor a mono lower alkyl glycol ether.

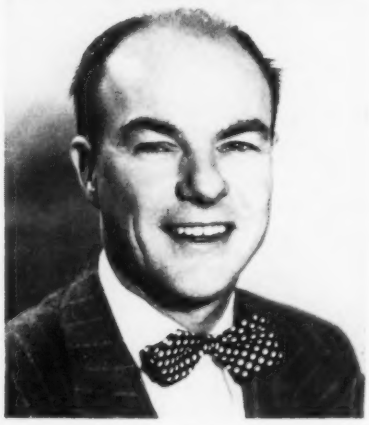
New Magnus Cleaner

A new non-combustible cleaner, designed for use on electric motors, switch gears and standard machine parts, was introduced recently by Magnus Chemical Co., Garwood, N. J. Called "Solvent No. 5," the product is said to be non-corrosive, odorless and of low toxicity. It may be applied with either a cloth, brush or sprayer. In addition, parts or motors may be cleaned by soaking in a tank of the solvent. Further information, in the form of a new bulletin, may be obtained from the company.

—★—

Emery Appoints Ritz

James W. Ritz has been named assistant sales manager of the organic chemical sales department of Emery Industries, Inc., Cincinnati, it was announced recently by R. F. Brown, sales manager. In his new assignment, Mr. Ritz will be responsible for sales of Emery's lines of plasticizers, fatty acid esters and polybasic acids. He succeeds R. T. Hull, who was recently named vice-president and general manager of the firm's newly-acquired Canadian subsidiary. Mr. Ritz joined Emery in 1941 as a research chemist. He later transferred to the Philadelphia sales office, where he was made manager in 1949. Four years later he was appointed eastern district manager of Emery's chemical sales department.



James W. Ritz

Maint. Show Committee

J. Lloyd Barron, director of sanitation for National Biscuit Co., New York, has been named co-coordinator of the program planning committee for the second annual Sanitation Maintenance Show and Conference, it was announced last month. The show will be held Oct. 14-16 at Navy Pier, Chicago. Mr. Barron will represent the Industrial Sanitation Management Association, one of the sponsors of the show. Representing the Association of Food Industry Sanitarians on the program committee will be Vincent Del Giudice of Armour and Co., Chicago.

Also named to the committee were Gerard J. Riley, editor, *Modern Sanitation;* and James V. Cawley, staff sanitation consultant, Airkem, Inc., New York. The three day meeting, according to Mr. Barron, includes a conference program on sanitation problems common to all industries and sectional meetings devoted to specific problems of industry groups.

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New Maas Calif. Plant

A. R. Maas Chemical Co., South Gate, Calif., a division of Victor Chemical Works, Chicago, recently announced that commercial quantities of a new group of ethylene diamine tetra-acetate products are to be manufactured in a plant which is now nearing completion at South Gate. Tradenamed "Questex," the products, presently in pilot plant production, are designed for use as organic sequestering agents. They are said to be of high purity and represent Maas's first group of polyamino-acid-based organic sequestering agents produced for nationwide distribution.

—★—

Avmor of Canada Expands

Avmor, Ltd., Montreal, recently announced acquisition of the deodorant block manufacturing division of McArthur Chemical Co., Montreal. McArthur, a division of St. Maurice Chemicals, is a leading Canadian manufacturer of paradichorobenzene blocks. According to A. Morrow, Avmor president, the purchase of the McArthur division will improve service and expedite shipments to Avmor customers throughout the dominion.

—★—

Cheek in New Post

Miss Audrey Cheek has joined the staff of American Bio-Chemical Laboratory, Inc., Baltimore, it was announced recently by Dr. S. L. Goldheim, director. In the past several years, Miss Cheek has done work in pesticide development and analysis and on plastic and wax treatments in food packaging.

—★—

Hercules Profit Lower

Hercules Powder Co., Wilmington, Del., recently reported a net profit of $4,087,904 in the first quarter of 1957. This is equal to 48 cents per share on 8,240,110 shares outstanding in the period. In the corresponding period last year, net income amounted to $4,544,522, equal to earnings of 55 cents on each of the 8,087,529 shares outstanding.

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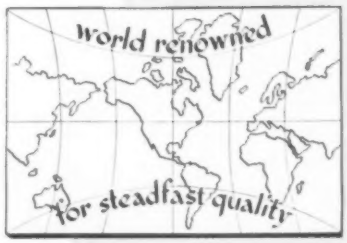

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- A non-ionic surfactant, foam enhancer, foam stabilizer.
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- A 50% active, crystal clear, free-flowing aqueous solution.

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Cleveland 14, Ohio

COMMERCIAL CHEMICALS, INC.
211 Hertel Avenue
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New Caustic Soda Grade

A new anhydrous grade of caustic soda, said to be free flowing, dustless, and of more uniform particle size than conventional grades, was announced recently by Wyandotte Chemicals Corp., Wyandotte, Mich. "Flo-chilled," as the new grade is designated, is manufactured by a newly developed process said to eliminate the factors that cause caking, which is a problem especially where automatic packaging and processing equipment is used.

"Flo-chilled" is designed for incorporation in alkaline cleaners, bottle washing compounds, drain cleaners, and other specialties. It is distinguishable by its two color label from the regular grades of anhydrous caustic soda which Wyandotte will continue to offer.

—★—

New Corrosion Remover

A new dry acid compound designed to remove scale and corrosion from metal surfaces, was introduced recently by Oakite Products, Inc., 157 Rector St., New York 6. Tradenamed "Drycid," the product comes in powdered form, is shipped in a non-returnable drum and is said to be non-fuming. It can be diluted with either warm or cold water and is claimed to be effective on aluminum, brass and galvanized surfaces.

—★—

New Barrett Appointments

Barrett Division of Allied Chemical & Dye Corp., New York, last month announced a series of changes in its chemical sales department. James P. Barry, former sales representative in Cleveland, has been appointed assistant manager of chemical sales. Mr. Barry joined Barrett in 1951 as a sales trainee. He was appointed sales representative in Buffalo in July, 1952, and later was transferred to Cleveland. In his new post, Mr. Barry will be responsible for the sale of plasticizers, "Cumar" resins and "A-C" polyethylene lubricants. He will be succeeded as Cleveland representative by Julian S. Pruitt. Mr. Pruitt, who joined the company in 1952, formerly was Detroit representative. He will be replaced in that capacity by Richard L. Slover, who has served as central New Jersey representative since November, 1955. Mr. Slover joined Barrett in 1954. Henry L. Schmitt, former representative in southern New Jersey and northern Pennsylvania, will succeed Mr. Slover in central New Jersey. Mr. Schmitt has been with the company since 1947.

New Tennessee Surfactant

Commercial production of a new liquid surfactant was announced recently by the marketing research and development department of Tennessee Corp., Atlanta, Ga. Tradenamed "Sul-Fon-Ate BL," the product finds application as a wetting agent and penetrant in many textile processes. It is said to exhibit high surface activity in strong alkaline medium and good surface activity in high concentrations of mineral acid.

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OTTAFECT No. 3

The modern answer for efficient, LOW COST disinfectants.

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Bush Hazardous Articles Bill to Committee

THE so-called "Bush bill," S. 1900, "to regulate the interstate distribution and sales of hazardous articles in packages . . . for household use," introduced in the U.S. Senate Apr. 16, has been referred to the Committee on Interstate and Foreign Commerce. The bill, also known as the "Federal Hazardous Articles Act," is probably the biggest news of a legislative year in which many of the 44 states whose law-making bodies are meeting, have or are considering bills to regulate chemical specialties.

Biggest loophole of the Bush bill is its provision that articles covered by the Federal Insecticide, Fungicide and Rodenticide Act of 1947 and the Federal Food, Drug and Cosmetic Act of 1938, are excluded from the bill introduced by Senator Prescott Bush, Republican of Connecticut.

S. 1900 would repeal the Federal Caustic Poson Act of 1927, It defines "hazardous article" as "any article or mixture of articles which is toxic, corrosive, an irritant, flammable, radioactive, or which generates pressure through decomposition, heat or other means, and which, when used and handled in any customary manner, or in a manner reasonably to be anticipated, is likely to cause substantial bodily injury or illness to man."

The bill also defines "poison," "toxic," "corrosive," "irritant," "flammable," "radioactive" and "label."

In the form it was introduced and read in the U. S. Senate the bill would require packages coming under its jurisdiction to carry the following information on their labels: name and place or business of the manufacturer, packer or distributor; common or usual name, or the chemical name, if there is no common name, or the recognized general name (not the trade name only) of the hazardous article or of each component which contributes substantially to the hazardous nature of the product. Also required is the use of a signal word such as "danger," "warning," or "caution." When necessary for protection an affirmative statement of the principal hazard of the article such as "flammable," "vapor harmful," "causes burns," "absorbed through skin," or similar descriptive words, must appear on labels. Other required label information called for in the bill are precautionary measures to be followed or avoided, and in cases where any article is defined as poisonous by the bill the word "poison" must appear on the label. Instructions for handling and storage, if required, are called for and the statement, "keep out of reach of children" must appear on containers holding not more than 10 pounds of a solid or not more than one U.S. gallon of a liquid where the product is designed for use in the household as opposed to industrial or laboratory use.

The bill also contains a pro-

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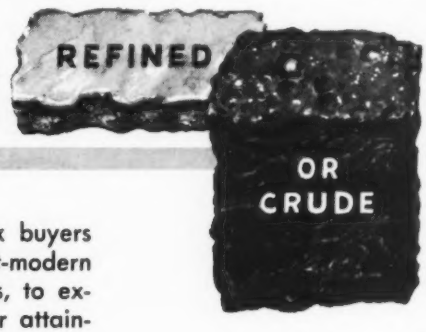

NEWS travels fast in a specialized field. More and more wax buyers are "sold on" River Plate. Those who checked up on our most-modern refinery facilities and subjected our results, over repeated orders, to exacting analyses are fully convinced of our dependability and our attainment of extraordinary quality.

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vision that packages, which because of their size and minor hazard presented, and where the labeling requirements constitute an unreasonable burden upon the manufacturer, packer or retailer, may be ruled exempt by the Secretary of the Department of Health, Education and Welfare.

Detergents in Sewage

(*From Page* 191)

ternary ammonium base; and a nonionic ether.

Having described experimental procedures, the authors report the following conclusions: (a) In the practical concentration range, synthetic detergents cause impaired filter performance by strain thrown on the biological system by overloading it with material chiefly of a carbonaceous nature. A main criterion is, therefore, the loading of the plant. (b) Of the properties peculiar to synthetic detergents suppression of oxygen-transfer rates is likely to impair filtration. (c) With heavily loaded filters originally yielding first class effluents, none of the major types of synthetic detergents found in British sewage is likely to cause a significant deterioration in performance, including nitrification in concentrations much below about 20 p.p.m. (active agent). (d) It appears likely that the activated-sludge process is more sensitive to synthetic detergents and critical concentrations may be lower.

These conclusions are intended to apply in general only to the biological oxidation by trickling filters and only in part to activated sludge. *Manufacturing Chemist,* Dec. 1956, p. 509.

—★—

CSC Sales Higher

Commercial Solvents Corp., New York, recently reported an increase in sales and a decline in earnings for the first quarter of 1957. Net sales for the three months ended Mar. 31 totaled $13,645,010 as compared with $13,024,948, in the corresponding period of 1956. Net income for the first '57 quarter amounted to $672,144, equal to share earnings of 25 cents. This compared with $909,817 and 34 cents in the first quarter of last year.

—★—

Lever Names Two

Appointments of Howard Eaton, Jr., as media manager of radio and television, and Jack Hobson as art director, were announced recently by Lever Brothers Co., New York. Mr. Eaton formerly was a TV account representative with Young and Rubicam Advertising Agency. Mr. Hobson, who will direct the art deparatment of the company's promotion services division, formerly was vice-president of Boyan and Weatherly Advertising Service.

—★—

du Pont Sales Record

E. I. du Pont de Nemours & Co., Wilmington, Del., achieved the highest quarterly sales in its his-

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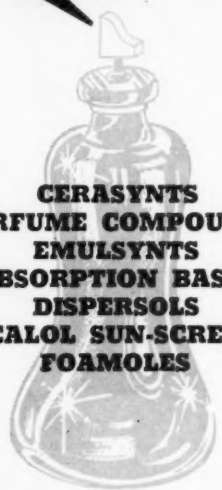

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Putting cosmetics in aerosols involves many technical considerations. The cosmetic base, the perfume, the propellant, the container, and the valve are only part of the problem. The manufacturer must be sure that each component is entirely compatible with the others. He must be absolutely positive that it remains that way until the customer throws the empty container away.

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tory in the first three months of 1957, according to a preliminary earnings statement issued last month.

Sales for the March quarter amounted to $502,000,000, a gain of nine per cent over the $460,000,000 volume for the initial three months a year ago and one per cent above the previous peak of $495,000,000 in the fourth quarter of 1956. Net income in the first quarter of 1957 totaled $99,193,667, equal to share earnings of $2.12, compared with $94,919,549 and $2.03, in the corresponding period a year ago.

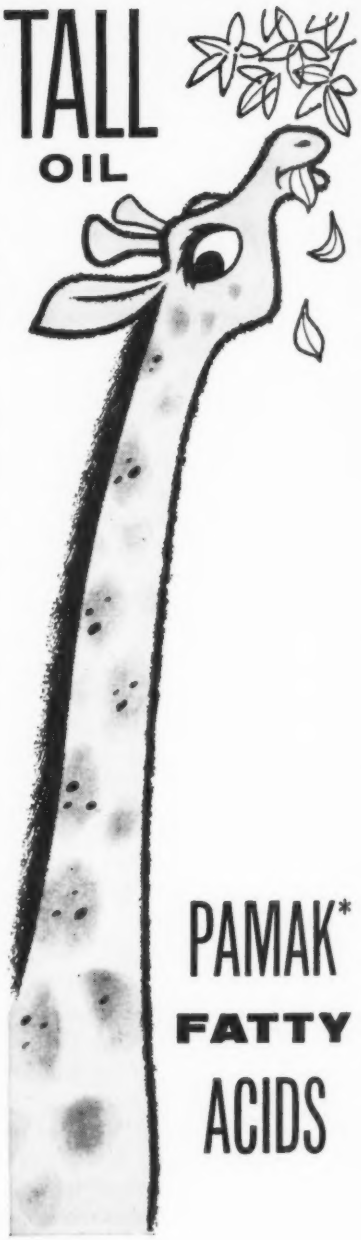
★

Monsanto Sales Record

Sales of Monsanto Chemical Co., St. Louis, and its domestic and Canadian subsidiaries totaled $151,285,000 in the first three months of 1957, according to a financial statement issued last month by Edgar M. Queeny, board chairman. This was the highest for any quarter in the company's history and 7.6 per cent above the $140,611,000 volume for the first quarter of 1956. Net income for the first quarter of 1957 was $11,534,000, equal to share earnings of 54 cents. This compared with $11,255,000 and 53 cents in the similar period a year earlier.

Max Graceman, left, president and founder of Grace-Lee Products, Inc., Minneapolis, is shown, with his son D. D. Graceman, vice-president and sales manager, holding can of firm's original product, "G-L" paste-type cleanser. Company, which now makes 86 products, including soap, detergents, liquid wax, dishwashing compounds, degreasers and paint strippers, celebrated 25th anniversary last month.

TALL OIL



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CHICAGO: E. J. Lewis Company, 9 S. Clinton Street, Phone: DE 2-6644
MONTREAL: Stahl Finish Ltd., Youville Station, Phone: DU 8-1821

Pennsalt Appoints Fowler

John D. Fowler has been appointed to the Hamilton, Ont., sales staff of Pennsylvania Salt Manufacturing Co., Philadelphia, it was announced recently by John M. Davidson, metal processing products sales manager. In his new post, Mr. Fowler will handle Pennsalt's line of metal cleaners, phosphate coatings and cold working lubricants. Mr. Fowler formerly was a technical service engineer with Consolidated Mining & Smelting Ltd. of Canada.

★

Davis in New Post

Bernard J. Davis has been named manager of the newly-established New Orleans district office of Pennsylvania Industrial Chemical Corp., Clairton, Pa., it was announced recently. Mr. Davis, who joined PICC in 1956, formerly served in a sales capacity with Shell Oil Co., New York. Prior to that, he was associated with American Cyanamid Co., New York, where he was engaged in technical service and sales development work.

★

New Nuodex Bulletin

A new technical bulletin describing its newly-developed fungicide, "Fungitrol 50," was issued recently by Nuodex Products Co., Elizabeth, N. J., a division of Heyden Newport Chemical Corp., New York. Designed for use on cellulosic materials, the product is said to be colorless and non-toxic when used for its intended purposes. Specifications and other applications are also listed in the booklet. Copies of the bulletin are available.

★

Atlas Appoints Dumovich

Atlas Powder Co., Wilmington, Del., has appointed Stanley J. Dumovich as salesman at its Houston, Tex., chemicals sales office, it was announced recently. Mr. Dumovich succeeds Latane des Lamb, who recently resigned. Mr. Dumovich, who joined Atlas in 1952, was assigned formerly to the company's chemicals regional sales office in Chicago.

DIETHYL TOLUAMIDE

Montrose "DET"

USDA has announced "Diethyl Toluamide" as "the best all-purpose insect repellent so far developed," highly effective against mosquitoes, chiggers, ticks, fleas and biting flies.

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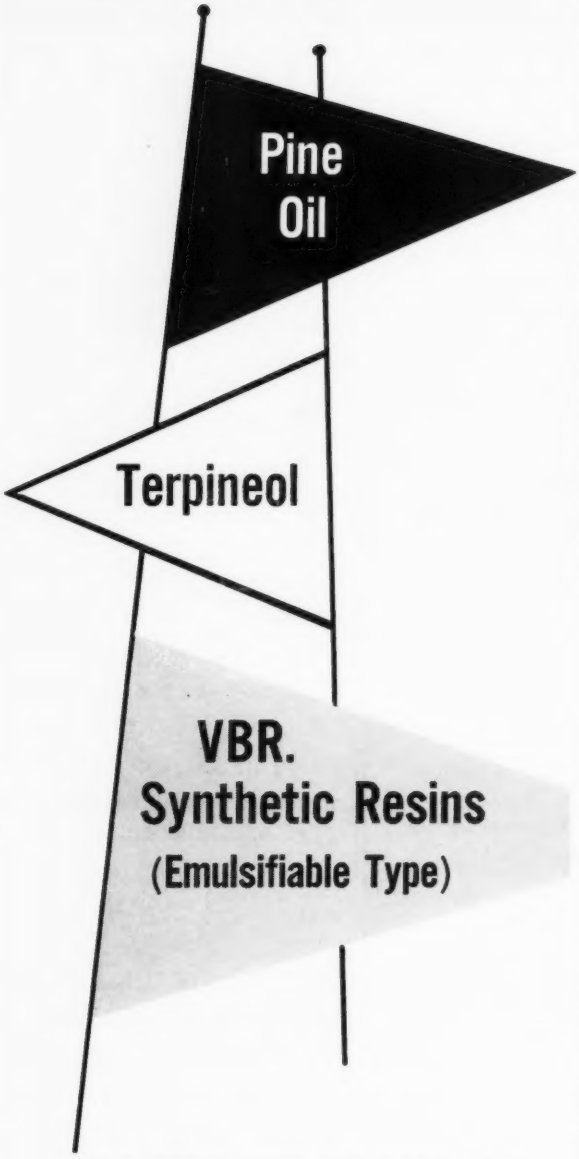

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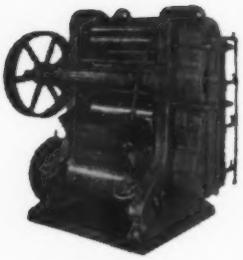

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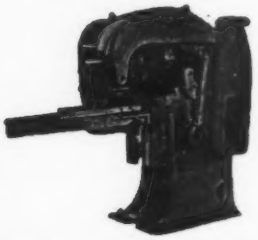

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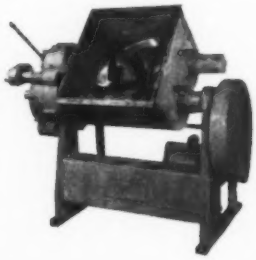

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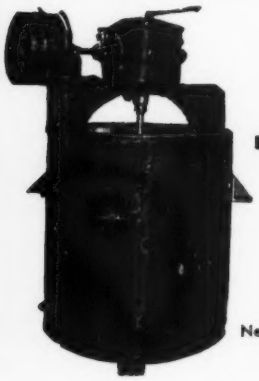
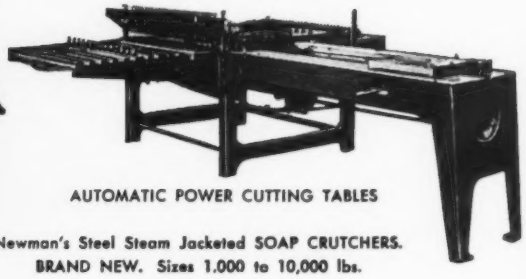


Single or double arm mixers, jacketed or unjacketed, all sizes.



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(*Continued on Page* 251)

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Chemical Specialties: Chemist, Ph.D. 20 years experience in development & production of disinfectants, waxes, soaps, detergents & insecticides desires position where executive ability counts. Address Box 843, c/o *Soap*.

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Full Up-To-Date Facts on Chemical Specialties. See page 118.

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(*Reference Books see page* 256)

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File Folder on Repellent

A file folder containing a complete set of bulletins on its insect repellent, "Tabutrex" is now available from Glenn Chemical Co., 2735 N. Ashland Ave., Chicago 14, Ill., it was announced recently by Joe Abrams, president.

At the same time, Mr. Abrams announced that the repellent has been accepted for registration by the U. S. Department of Agriculture for use as a fly repellent on dairy and beef cattle and in dairy barns. In addition the repellent, which chemically is di-n-butyl succinate, may be registered as a roach and household ant repellent.

Bulletins now available on "Tabutrex" from Glenn include a general bulletin dealing with registration of the product, toxicity, physical characteristics and other properties. Formulations with oleic acid are covered in another bulletin, and a summary of data on fly control for livestock is reviewed in bulletin No. 3. Bulletin No. 4 contains a summary of data on roach repellency. A fifth bulletin contains a summary of data on house fly control in heavily infested food production areas. There is also a bulletin on preliminary data on miscellaneous insects. Bulletin 7 covers an analytical method for the determination of the active ingredients of "Tabutrex" formulations. A price schedule appears in bulletin No. 8. Suggested labels for a number of insect repellents, including a pressurized roach spray and repellent, are given in bulletins 10 through 17.

—★—

Phillips Wins Lever Award

Barry Phillips, Denver district manager of Lever Brothers Co., New York, was awarded the president's trophy recently for winning a companywide district sales contest. Mr. Phillips, who has been with Lever for 34 years, was presented with a sterling silver bowl by William H. Burkhart, president of Lever, and Warren N. Burding, vice-president, at a dinner at the Brown Palace Hotel, Denver. Contest competition was based on a percentage of sales in relation to quotas in Lever sales districts throughout the nation. Also included in the award is a two-week,

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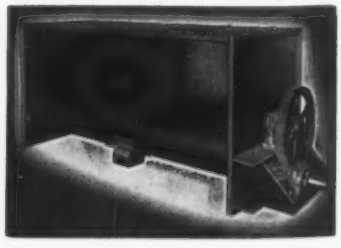


all expense trip to London and Paris, plus $500, for Mr. Phillips and his wife.

Two other Denver district salesmen, Dave Keever, Amarillo, Tex., and Harold Sahling, Albuquerque, N. M., also received cash awards at the dinner. Lever's Denver district is responsible for the sale of company products in Colorado and New Mexico and parts of Wyoming, Texas, Kansas, Nebraska and South Dakota.

—★—

Monsanto Names McKee

John J. McKee has been named sales representative in Charlotte, N. C., for the inorganic chemicals division of Monsanto Chemical Co., St. Louis, it was announced recently. Mr. McKee joined Monsanto in 1955 and was formerly a company representative attached to Atlanta, Ga., district office.

CSMA Meeting

(*From Page* 85)

topic, "Developing Markets for Detergent Materials in the Soap and Specialty Industry" will be one of the highlights of the Soap, Detergents and Sanitary Chemical Products Division meetings, the afternoon of May 22. Similarly, a symposium on automotive brake fluids is one of the major features of the Automotive Division's meeting, the afternoon of May 21.

A range of topics will be covered by the Waxes and Floor Finishes Division at its two sessions. Subjects to be discussed at the joint session of the Automotive and Waxes Divisions, Wednesday afternoon, May 22, include: "Measuring Shock Resistance of Paste Wax," "Fluid Mixing in Chemical Specialties Manufacturing," "The Merchandising of Floor Waxes and Automotive Waxes" and "Radioactive Trace Testing of Auto Wax Thickness and Durability."

A series of papers featuring application studies were presented before the Disinfectants and Sanitizers Division, the morning of May 21.

Insecticides for the military, rodent control and termite control chemicals will be covered in papers during the session of the Insecticide Division, the afternoon of May 21.

Story of Shulton

(*From Page* 56)

He saw the plant finished and he was active as president of Shulton up to the time of his death. He died after a brief illness in November, 1950 at the age of 74. His son succeeded him as president of the company.

George L. Schultz, unlike the son of many an outstanding father, is a strong character in his own right. Shulton's extensive and diversified research activities are his creation and he is in large measure responsible for the continued growth and development of the company.

New Aerosol Valve

(*From Page* 171)

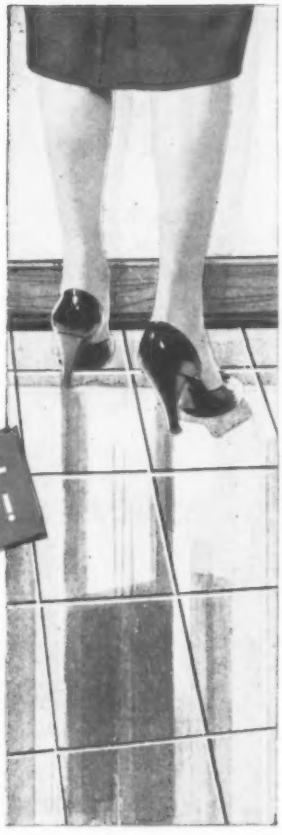
to be held in an upright position. Dispensers without educator tubes must be held in an inverted position. If packages have valve by-pass, which allows spraying in either position, abnormal loss of gas reduces delivery rate and changes spray characteristics as the dispenser is emptied. Present plans call for licensing of manufacturers to produce the valve under Gulf's patents.

As Reader Sees It

(*From Page* 43)

Health Service, Washington, D. C. Dr. Goddard's office is the clearing house for all information pertaining to poison control centers.

The booklet, "The Prevention of Occupational Skin Diseases," edited by Dr. Louis Schwartz, is available from the Association of American Soap & Glycerine Producers Inc., 295 Madison Ave., New York 17, N. Y. The booklet was underwritten by the Soap Association. Ed.



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Coming Meetings

American Oil Chemists Society, fall meeting, Cincinnati, Sept. 30, Oct. 1 and 2.

Association of American Soap & Glycerine Producers, 31st annual convention, Waldorf-Astoria Hotel, New York, Jan. 22-24, 1958.

Chemical Market Research Association, Lake Placid, N. Y., Sept. 16-17.

Chemical Specialties Manufacturers Association, 43rd mid-year meeting, Drake Hotel, Chicago, May 20-22; 44th annual meeting, Hollywood Beach Hotel, Hollywood, Fla., Dec. 9-12.

CIBS monthly luncheon meeting, Toots Shor's Restaurant, New York, June 13.

Drug, Chemical and Allied Trades Section, New York Board of Trade, 67th annual meeting, Galen Hall, Wernersville, Pa., Sept. 19-21, 1957.

Grocery Manufacturers of America, 49th annual meeting, Waldorf Astoria Hotel, New York, Nov. 11-13, 1957.

International Sanitation Maintenance Show & Conference, 2nd annual exposition, Navy Pier, Chicago, Oct. 14-16.

National Association of Retail Grocers, Los Angeles, June 10-14, 1957.

National Pest Control Association 24th annual convention, Louisville, Ky., Oct. 21-24.

National Sanitary Supply Association, 35th annual convention and trade show, Coliseum, New York, Feb. 22-24, 1958.

National Supermarket Non-Food Exhibit, Shrine Exposition Hall, Los Angeles, August 25-28.

Packaging Machinery & Materials Exposition, Convention Hall, Atlantic City, N. J., March 25-28, 1958.

Synthetic Organic Chemical Manufacturers Association, monthly luncheon meetings, Roosevelt Hotel, New York, June 11; annual outing, Skytop, Pa., May 26-28.

Toilet Goods Association, 23rd annual convention, Americana Hotel, Miami Beach, Fla., May 14-18, 1958.

Western Plant Maintenance and Engineering Show and Conference, Civic Auditorium, San Francisco, June 11-13.

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Tale Ends

AN eight-page booklet covering the care and treatment of large floor areas which was put out last year by a committee of the Waxes and Floor Finishes Division of the Chemical Specialties Manufacturers Association has been distributed to the extent of over 20,000 copies and it is still going strong. In one day at the CSMA office, 115 individual requests for the booklet were received. The committee which did the preparation job was headed by Earl Brenn, vice-president of Huntington Laboratories, Inc., Huntington, Ind.

* * * * *

Detergents might cause skin cancer in humans if said humans were exposed to them for about a hundred years. At least, this is the conclusion from work at the University of Wisconsin on mice. Detergents applied to the skin of mice which were first given doses of a chemical known to cause skin cancer were found to cause cancer after prolonged use, up to 40 weeks or half the natural life of the mouse. So, if any publicity seeker, medical or otherwise, comes out with a yap that detergents may cause skin cancer, as well could happen, we're all ready to slap him down.

* * * * *

John Harry Lawson IV arrived in Chicago Feb. 28. We just got the news. Now it so happens that this young bloke is a brand new grandson of a pretty well-known grandfather, one J. H. Lawson, Sr., widely known in the sanitary supply trade for years as Sonny Lawson. Where he got the "Sonny" we don't know. Anyway, Sonny is vice-chairman of Enterprise Paint Mfg. Co., the parent concern of Federal Varnish of which he also used to be prez. (Glenn Doerr is the new prez.) The new arrival's old man is Richard Lawson, Sonny's son. All very confusing—eh, what?

* * * * *

For some strange reason, whiskey flavored tooth paste is the cause of some commotion in the mid-west, more specifically Kentucky, the great whiskey state. Now, it seems that some of our more righteous legislators in other states fear that the idea will spread. Lately, state legislators in Iowa are studying a bill which would prohibit the manufacture and sale of whiskey flavored tooth paste in that state. Probably they fear that little Jimmy McGuff will be showing up at school with a whiskey breath.

* * * * *

Out in Denver, a young fellow was picked up by police after he had broken into three service stations. His excuse for breaking in was that he liked the kind of powdered soap they used in the wash rooms. Strange as it may seem, nothing was stolen in any of the three breaks. The bloke apparently just liked clean hands. So instead of jail, they took him to a psychiatrist.

* * * * *

The Burma-Shave people found out recently that their famous road-side jingles known to motorists the country over were costing too much money. They were using wooden signs, in fact 36,000 of them. Cost of painting, erecting and maintaining them took a lot of money. They were about ready to give up on the idea after many years when somebody came up with aluminum sheets printed by silk screen. Now their road crews merely staple them over present signs,—and that's it.

* * * * *

Entomologists may soon be wearing chef's hats if this craze for human consumption of various and sundry insects continues, according to SCAN, Shell Chemical Agricultural News. Among discriminating gourmets, french fried grasshoppers have become almost commonplace, they tell us. Now, these alleged gourmets are going in for roasted termite eggs and toasted butterflies. Next, it will probably be crispy, crunchy boll weevils a la Newberg. Well, as the editor of SCAN says, he'll stick to meat and potatoes for a while. So will we!

* * * * *

Aroma of roses to replace the stink of Diesel fuel exhaust fumes is the newest gimmick to come out of Detroit. A special perfumed deodorant blend to mix with bus exhaust fumes has been devised by General Motors. The deodorant is dispensed from a cylinder attached to the exhaust and is stated to be unusually successful in combatting unpleasant fumes which find their way into buses.

* * * * *

Colored soaps are really selling well we are told. Of the four shades, plus white, in which Lever's "Lux" is now available, pink is the most popular shade, we learn via the grapevine. Could that be the reason P&G's "Camay" is made in white and pink only? Incidentally, the boys who know say that "Camay's" new perfume is outstanding. It ought to be: Its cost is roughly one third that of the entire cost of producing the bar.

* * * * *

The expression "closing an issue" is widely used in the publishing business to designate okaying the pages of a magazine or book. This is the final step before the printer takes over and "puts the magazine to bed", or starts printing. So, when a chap called the other day for an appointment, we asked for a postponement on the grounds that we were "closing". "That's too bad", he said, apparently under the impression that we were going out of business.

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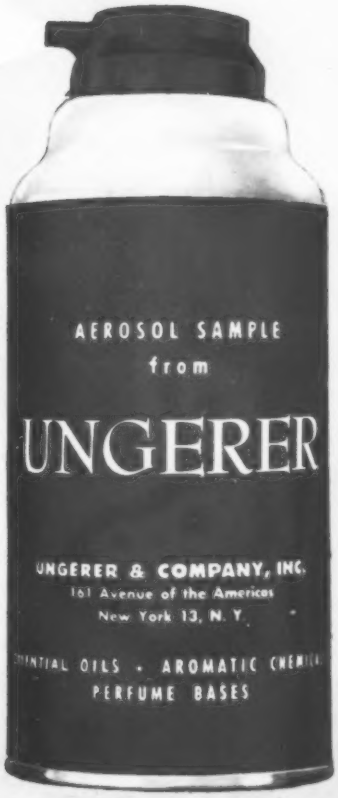

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